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ABSTRACT

The present study is an analysis of 17 case studies on innovation, organized by the Council for Educational Research and Innovation for the Council of the Organisation for Economic Co-operation and Development. The general purpose of the case studies is to achieve more understanding of the change process in education in relation to political, administrative, organisational and educational dimensions. The research approach involves a study of innovations at the central, regional, and school levels of the educational system. Volumes I, II and III of this series present the case studies. The first and second chapters of this fourth volume establish the theoretical framework of the study. Chapters III, IV and V review the reports and examine certain aspects in the descriptions of each of the institutions at each level in an attempt to identify common or contrasting features. Chapter VI looks at educational innovation from the individual's point of view. Alternative roles of research in educational innovation are explored in Chapter VII. Chapter VIII examines some of the factors explaining barriers and unintended effects in innovation. Chapter IX synthesizes findings to use them as a basis for discussion about roles and functions of different institutions at various levels in the educational system. Annex I lists the location and researcher for each of the case studies; Annex II presents a draft of the revised guidelines for the case studies. (KSM)

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This publication is one of a series of four volumes on educational innovation:

Volume I is concerned with central institutions;
Volume II deals with innovation at the regional level;
Volume III deals with innovation at the school level;
Volume IV "Strategies for Innovation in Education", summarizes and draws conclusions based on the earlier volumes.

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Centre for Educational Research and Innovation (CERI)

CASE STUDIES OF EDUCATIONAL INNOVATION:

IV. STRATEGIES FOR INNOVATION IN EDUCATION

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT
1973

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PREFACE

The vast literature on the dynamics of social change, with its two main sources in the empirically-based social sciences which grew up in the United States and in Marxist political and social theory, makes it necessary to justify yet another report on this subject. This justification lies in the reality that, whereas it seems apparent today that social changes are mainly driven by changes in social values and culture, most existing theories make the social components of change subordinate to economic or technological transformations in society.

The very idea that there might be "Strategies for Innovation in Education" - the title of this report - implies a voluntarist concept of social change in contradistinction to the view that social change is a residual. It means that we can "create" the education system, and therefore the society, that we in some sense want.

Herein lies the dilemma. For in education, and in all social affairs, "we" are the parents, the children, and the communities which in the real world have conflicting views of what we want. Thus, a strategy for educational change cannot be orchestrated by policy makers. It must allow for the participation and power of all the social groups involved, whether national, regional or local.

At the same time, the general features of the educational system must reflect the will of the political community in its most general sense, for in the societies of the second half of the 20th century education has become a key to equity for all citizens. And equity to some extent means the same for all. Thus we find in education all the problems of relating general political decisions to grass roots democracy.

It was for these reasons that the study which follows was based on a variety of case studies at different levels of the educational system, ranging from central government institutions to individual schools.

The new thing that emerges from the study is that, whilst no single model could or should prevail, the broad features of an innovation system in education that can respond to modern needs are identified. Some decisions about change in the educational system belong, of necessity, to the community as a whole; in that sense there should be a national strategy for educational change. At the same time, many changes can only be initiated at the local level, and all call for creative action in the school: decentralisation of power is thus a necessity for the functioning of the educational system. Yet the school can only be creative if the environment is conducive to change, and this is dependent on many aspects of policy for which national, regional and local authorities are responsible: financing, information systems, research and so on.

We are thus led to the conclusion that one of the most challenging tasks in the 1970s will be to develop national innovation systems which can facilitate change as a permanent feature of educational systems. This challenge is common to many areas of social action in addition to education, for example health and urban development. It is hoped that this report will thus have a significance beyond the field of education as such.

The project has involved the professional and organisational efforts of a considerable number of people, and the final synthesis is built upon such efforts. It is in a real sense the product of a team effort, and I would like to thank all those whose painstaking professional contributions, particularly in the case-studies on which the whole analysis has been constructed, were essential to success.

The results of the project will appear in four volumes, of which the present report is the final synthesis:

Case Studies of Educational Innovation:

I - At the Central Level
II - At the Regional Level
III - At the School Level
IV - Strategies for Innovation in Education

The author of the final analysis reported in this volume is Mr. Per Dalin, who was the CERI staff member responsible for developing and supervising the project.

J. R. GASS
Director
Centre for Educational
Research and Innovation

ACKNOWLEDGEMENTS

by the author

A study of this kind can only be carried out by teamwork and collaboration from many individuals at various stages in the project. I take this opportunity of expressing gratitude for the valuable contributions of the 24 researchers who did the field work on which this analysis is based; and also to all the administrators and others who provided facilities and contributed ideas in the 17 case studies. In particular, Professor Richard O. Carlson assisted in the early planning phase of the project and contributed to the outline to be used by the researchers.

The first draft of the report has been read and commented upon by Gerry Bernbaum, Frank Chase, John Goodlad, Ron Havelock, Brian Holmes, Torsten Husén, Sixten Marklund and John Nisbet. They all contributed with extremely relevant comments and suggestions for modifications. In particular Professor Nisbet, in addition to his role as critic, has edited this final version.

All the researchers and some other key administrators in the systems have cross-checked my information. Any discrepancies, however, that may have arisen in an analysis dealing with so many varying educational systems and different local conditions are my own responsibility.

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SUMMARY AND CONCLUSIONS

The present study is an analysis of 17 case studies of innovation organised by CERI, following a recommendation from the CERI conference on the Management of Innovation in Education, held in Cambridge, England, in 1969. The general purpose of these case studies was to achieve a better and more comprehensive understanding of the change process in education in relation to political, administrative, organisational and educational dimensions. The research approach involved a study of innovations at three different levels of the educational system, namely:

1. Innovations at the central level
2. Innovations at the regional level
3. Innovations at the school level.

The rationale behind the selection of these three levels of educational practice was the assumption that the influence of various forces inside and outside the educational system would operate at one or more of these levels.

A Theoretical Framework

As a basis for the research design, a survey of the literature on change was undertaken, and a set of definitions was chosen to allow international comparison of results. The term "innovation" in this study means "a deliberate attempt to improve practice in relation to certain desired objectives". This, however, does not exclude innovations which are also concerned with the shaping of new objectives or policies or functions unrelated to old objectives. The definition implies that something better is replacing old practices. The important question is better <u>for whom</u>? This has been an important question for all the 24 researchers who were invited to plan the individual case studies and carry out the field work.

In this study the following categories of educational innovation have been distinguished:

Category I	Objectives and Functions Innovations concerned mainly with the objectives and functions of the school in its broader social and economic context.
Category II	Organisation and Administration Innovations concerned mainly with the organisation and administration of the educational system.
Category III	Roles and Role Relationships Innovations concerned mainly with role definitions and role relationships.
Category IV	Curriculum Innovations concerned mainly with the teaching/learning process, its aims, content, methods, evaluation, material and the internal organisation of instruction.

The term "strategy" is used as a broad concept meaning "all available procedures and techniques used by individuals and groups at different levels of the educational system to reach desired objectives". A typology originally developed by Bennis, Benne and Chin(1) was used as a frame of reference in the study. The three main categories are:

1. Empirical-rational strategies
2. Normative-re-educative strategies
3. Political-administrative strategies.

As a model for analysis, a process-oriented model of innovation was chosen, referred to in the study as the planning-research-development- and diffusion model (P-R-D-D model).

The tasks for the present analysis can be summarised as follows:

A first task has been to study the process of innovation as observed at the three levels in the system, and to compare this with the P-R-D-D model. A particular point of interest is the conditions under which innovation takes place.

Are various types of innovation managed differently? What effect on the process and on the direction of change does

1) Bennis, W.G., Benne, K.D. & Chin, R. The Planning of Change. Holt, Rinehart & Winston, London, New York, Sydney, Toronto, 1969. See further discussions Chapter II.

participation of different interest groups have? Finally, what effect do different personnel policies have?

A more general discussion of alternative roles of research as a strategy in the innovation process has been undertaken on the basis of this detailed analysis. In this respect it is of major interest to analyse the various relationships between decision-making and research.

The study of various barriers and unintended effects has been used as a starting point for an assessment of the process of innovation, and an overall evaluation of roles and role-relationships in the educational system has been used to propose a structure for educational innovations.

Central institutions for educational innovation

The institutions that were studied in this category were the Research for Better Schools Inc. (U.S.A.), the New Jersey State Administration, Division of Research, Planning and Evaluation (U.S.A.), the Schools Council (England and Wales), the National Board of Education (Sweden), the National Council for Innovation in Education (Norway), the Ontario Institute for Studies in Education (Canada), the Bavarian State Institute for Educational Research and Planning (Federal Republic of Germany). Relatively few characteristics are common to all the institutions studied. They all, however, represent a departure from traditional strategies for educational change. They represent a necessary link between the formulation of a normative change at the policy level and the implementation of this policy. They usually cover more than one specific sector of the system and more than one region of a country. Their concern with the educational system as a whole is another departure from traditional, vertically divided educational administration, and provides an opportunity for a wider view of educational needs in the entire system. Some institutions look upon innovation as a means for serving political objectives, others regard innovation as a response to crisis in the present system, and still others look upon innovation as a systematic research and development process. They differ significantly in their relationship to policy, and also in their organisational set-up.

A wide range of activities takes place in all the institutions, large-scale curriculum development being the most important activity. The P-R-D-D model has been compared with the

innovation practices in the institutions studied. So far only the RBS uses the P-R-D-D model as its approach to its curriculum development. Various aspects of this model are apparent in the other institutions, partly depending on their original structure and relationship to the schools, and to decision-making bodies.

All institutions use a combination of strategies in their work. Often political-administrative strategies provide a basis for empirical-rational approaches, and in some cases the latter are used to strengthen the basis for political-administrative strategies. The normative-re-educative strategies represent the most radical departure from present practice in the institutions, and in only few cases are such strategies used by the institutions themselves. The weakest part of the process in the institutions seems to be the problem-identification phase. This phase is more a political process than an empirical one, but is inadequately organised, particularly in institutions not closely related to the decision-making structure. The different strategies used for different categories of innovation seem to follow the same pattern in all institutions.

Innovative regions

The regions studied were the Leicestershire region (U.K.), the Devonshire*) region (U.K.), the Malmö region (Sweden), the Wetzlar region (Federal Republic of Germany), and the York region (Ontario, Canada). The regions were chosen not because they are necessarily the most innovative regions in their country, but because they are involved in innovation to a fairly high degree, and are continuously trying to improve their own practice. Each of them represents the chief responsible educational administration between the national level and the schools. They differ in their responsibilities, particularly in the way they formulate and adopt new policies and develop and implement innovations.

Educational regions, by their very nature, play a middle man role. Although they sometimes show leadership and initiative, they are relatively small units and have small resources for innovation, and therefore they try to link external with internal resources. They play a linkage function. Negotiation is an important part of regional innovations, and the managerial group plays both an initiating and a service role. Evaluation is seldom done in a formal sense, and in fact few innovations at the regional level fall into the pattern of the P-R-D-D model.

*) "Devonshire" and "Devon" synonomous.

A key element in the regional strategy is the use of information and outside experts in the process. Also the change from the use of inspectors, whose main function was to control classroom practices, to the use of advisers, or consultants, is an interesting example of a change from a political-administrative to an empirical-rational and a normative-re-educative strategy.

Innovative schools

The schools which were chosen for this study were the Oslo Experimental Gymnas (Norway), the Tapiola School (Finland), the Rødovre Experimental School (Denmark), the Countesthorpe College (U.K.) and the Thornlea School (Ontario, Canada). The schools were chosen not because they had been identified at any time with any one particular innovation, but because they were seen as schools able to improve their own practices. They were either schools "for the future", mainly resource-centred schools, or "anti-schools", schools with radical alternative practices to those of traditional schools.

New decision-making structures were important innovations in two of the schools, as well as new teacher/student relationships. Individualised instruction in one form or another was important in three schools. The same was true for flexible groupings. More subject-oriented innovations were typical for two schools.

All schools, but in partfcular those experimenting with new modes of instruction and evaluation, faced negative reactions from parents and the community. It appears that, as external constraints (e.g. examinations) are modified, local control mechanisms (e.g. parents) tend to replace traditional external controls.

The process of innovation was characterised by openness towards the outside world, and towards discussion and criticism inside the schools. In most cases the innovations were not invented in the strict sense by the schools. Rather they were developed by the schools. All cases illustrate that no idea, practice or product is automatically applicable in the school. Education is a process where an understanding of complex social interaction procedures, human needs, administrative constraints and the readiness of the total "school culture" is essential before any innovation can even be started.

Evaluation is not done in any formal sense in the schools. In most cases, however, through openness and skilful management a process evaluation takes place.

In all the schools the "climate" is regarded as the most important factor in the process of innovation. Leadership, participation in decision-making, a problem-solving capacity and openness towards problems and people seem to be important aspects of this climate. Consensus about objectives or means is not taken for granted and conflicts are an intrinsic part of any innovative project.

There is no clear relation between the freedom which each school has to innovate and the type of innovation which occurs in the school, and which it defines as its task. All schools are restricted by external constraints (regulations, examinations, financial limits) and by internal constraints (philosophy or group climate). Fewer external constraints do not necessarily give the school more relative freedom to innovate. External "constraints" are sometimes important shelters for the schools, and if one tries to remove them, other mechanisms of control replace them. This is particularly true if the constraints reflect expectations in society or a description of the way one wants to see the schools behave. Schools are not free in the sense of having freedom to determine their own function. Most schools have some freedom to determine their practices, as long as these are not inconsistent with the function of the school. A careful analysis of the function which each external regulation plays in relation to expectations in society is necessary if one wants to give the individual school more freedom. As educational systems function today, one is inclined to question seriously the concept of autonomy of the school in the process of policy formulation and even policy adoption.

The individual and the process of innovation

To what extent can the individual influence, participate in and learn from the process of educational innovation? If the innovation process is a continuous renewal process, it is an important learning process that should involve individuals at all levels of the educational system. Teachers form an important interest group in the educational system. Teacher participation in innovation is looked upon as crucial for its success. There are clear differences amongst the countries with respect to the type of involvement and the degree of involvement of teachers in the process of innovation. Although teacher contributions are crucial, it is difficult from the case studies to draw general

conclusions on the effect of teacher participation. In schools where there is teacher control of innovation, most innovations are concerned with curriculum changes, which usually do not threaten the role and status of the teachers and are far less loaded politically than problems of school structure and administration. The fact that teachers play a part in the planning and development of innovation does not necessarily mean that schools are "better off", since the very fact that teachers have control may prevent the schools from doing more "relevant" things, both in the short and the long term, than innovations in curriculum.

Student participation in innovation also seems to have important effects on the direction and process of change which differ considerably from those produced by teacher involvement. In schools where students have an important say, the innovations which are favoured concern new roles, role relationships and management structures. Students also seem to regard a number of the traditional curriculum innovations as irrelevant and of little value.

It is not necessarily clear, therefore, that "participation in decision-making" means more democratic decision-making. In most cases where localism is favoured, it means control by local professional groups and consequently the neutralisation of other groups who might conserve practices that others may wish to see changed dramatically.

In few cases are the parents actively involved in the innovation process in the schools. They do not seem to object to internal educational innovations if these do not change the function of the school. As a conclusion, one can say that the managerial group in particular, and also the teacher group, are the most influential groups in the process.

Various incentives, selection and recruitment procedures tend to influence the process of innovation. This is true for all innovations studied, and may explain both individual and institutional behaviour to a large degree. In most cases, however, it is noted that the procedures adopted are developed for maintenance rather than innovative functions in the system.

The role of leadership seems to be crucial in most institutions studied, in particular at the school level. Various styles of leadership seem to produce the same type of result, but in all cases "leaders" seem to play an active role in the search for information and knowledge relevant to the innovative activities.

Alternative roles of research in educational innovation

The growth of educational research and development has resulted in new types of institution with innovation in education as their only or main mission. This implies a change in the organisation of research and often also a change in the role of research. The research role is discussed in this volume in relation to the P-R-D-D model, to policy, and to the schools. The possibilities and limitations of the planning-research-development- and diffusion model are summarised, based on the analysis of the 17 case studies. The model is looked upon as being a possible instrument for the development of certain innovations in education, mainly restricted to certain fields in the curriculum area. In these areas, care has to be taken to secure a proper balance of objectives. If the model is used as an overall model for educational change, it means a centralisation of power based upon empirical-rational strategies, and this has implications for the whole educational system, particularly at the classroom level.

Most of the central institutions studied are oriented towards policy-making. However, their relationship to policy differs. There is no clear common trend in the institutions studied in terms of their relationship to policy-making. It is clear, however, that the degree of dependence on policy-making has definite consequences for the activities and the process of innovation.

This analysis argues for a new and wider research role in the schools themselves. Characteristic of this research role is service to the user, to teachers, parents and students as well. The purpose is "informative criticism"(1) which in the long run may create a critical attitude which is regarded as a necessary condition for a healthy educational system.

Barriers and unintended effects

Various barriers and unintended effects in the process of innovation have been analysed. It is assumed that the proper balance between stability and change is important in any educational system. At the same time, conflicts and unrest in the system may be used as important incentives for meaningful changes.

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1) Eide, K. Educational Research Policy. CERI/OECD, Technical Report, 1971.

In most innovative projects, creative individuals are crucial, and on the other hand the process tends more and more to be regulated and systematised. Sometimes creativity and planned behaviour are incompatible dimensions.

It is important to consider the way evaluation functions in the process of innovation. Evaluation is important, but often it is connected with unjustified conservatism, and most often it is based on a limited understanding of how the educational system functions and consequently has serious unintended effects.

The barriers to innovation, which are observed in most cases, are not necessarily bad or unwanted. In many cases, the managerial group defines barriers as psychological resistance towards change, and change agents see their role as to serve as midwives and to convince those who are lukewarm. However, barriers can generally be classified in any of the following categories:

1. They are value conflicts, since major innovations always involve changes in educational, social, political or economic objectives.
2. They are power conflicts, since major innovations often imply a redistribution of power.
3. They are practical conflicts, either since many innovations cannot prove their quality or because various management problems have not been solved.
4. They can also be psychological conflicts, arising from a fear of the unknown.

Why do some innovations fail? In many cases the reason cannot be traced back to the innovator or any other internal factors in the process. Usually the cause is a lack of understanding of political, legal, administrative and financial constraints, including the in-built reward and punishment structure, all of which have been created to maintain the existing system and not to serve an innovative function. An understanding of these processes is necessary if innovations are to succeed.

Most innovations are based on certain ideologies and it is considered crucial that innovators should be able to understand the underlying assumptions or the ideology behind their ideas, and to evaluate their relevance critically in relation to contemporary issues in a broader educational, social and economic context.

Strategies for educational innovation

If we look at the educational system and analyse the process of innovation throughout the system, we find that we are dealing not with one, but with several processes at various levels of the system. In the central institutions, for example, the process is mainly one of initiation, development and evaluation. The process at the regional level is mainly one of linkage, and at the school level the process is mainly one of practical problem-solving. If we try to identify the "ideal place" in the system for innovative decision-making we have to take into account both the type of innovation and the stage in the process.

When we analyse the formulation and adoption stage of an innovation, as well as the development and implementation stages, a complicated picture arises which is difficult to summarise (see Chapter IX). In any system, whether highly centralised or highly decentralised, problems of implementation are particularly complex. Innovations dealing with new objectives and functions, mostly concerned with the educational structure, seem to benefit from a rather centralistic organisation. Innovations dealing with administrative and organisational developments, and innovations in role relationships, are difficult to implement. Changes in human relationships can rarely be achieved by force, merely by means of laws and regulations. Present incentive systems are also important factors to consider in the implementation of these innovations. We know too little about how complex social systems change role relationships and decision-making structures. It is a tenable hypothesis that every single school has to find its own solution and therefore has to go through a continuous learning process. This would require drastic changes in conventional thinking about schools. The role of central authorities - or perhaps of any external authority - in the dissemination and implementation of these innovations (role and role relationships) is therefore in principle questionable and difficult.

Innovations in curriculum and examinations have clearly an in-built goal or value component and a technical component (as most innovations have). The groups most directly involved in these innovations, namely the teachers and the students, have raised serious doubts about present attempts to reform the system, and a rethinking of roles and responsibilities is necessary in all systems studied.

In the discussion of strategies for educational innovation,

the question of centralisation versus decentralisation is often raised. There is no indication in the case studies that any one decision-making structure is generally more desirable than another as a strategy for educational innovation. The problem is usually that different types of innovation demand different types of solution. The only conclusion one can draw is that clear relationships between decision-making structures and strategies for educational innovation do exist. Solutions have to be found in relation to what one wants to achieve. This demands a flexible educational organisation that can adjust to the objectives for the system and not the other way around. In all cases certain constraints will have to be imposed upon the school. The conclusion of the study is that the following constraints may be necessary in any case:

1. "Quality" requirements in certain core activities.
2. Entrance requirements in certain receiving institutions.
3. Requirements concerning equality of educational opportunity.
4. Regulations concerning the level of expenditure.

The final section of the study sets out a structure of educational innovation which may satisfy basic requirements in all the countries studied. In some countries parts of the proposed structure are already operating. Education as a service function for the user is accepted as an ideal, on the assumption that the process necessary to facilitate educational innovation can best be achieved through the active involvement of the user. It is also assumed that any innovative system has to be regarded as highly dynamic.

It seems important that all countries should have a national innovation policy which can redefine the nature, the objectives and the functions of education in its social and economic context. Without such a national policy, the individual learner, the school and its staff, would be hampered by outdated laws, regulations and requirements, because the structure itself is the main mechanism of control upon the individual school. The national innovation policy should not be concerned with only one stage of the process or only one type of innovation, but requires an analysis of the whole educational system and the conditions for a successful innovation process. Its role is to lay down the conditions for innovation in the system.

A case is also made for a local innovation policy, which

should aim to facilitate a continuing dialogue in the schools themselves, and between the schools and the regional and central bodies. Careful consideration should be given to those aspects of the policy which encourage a problem-solving attitude and an innovative climate. With major responsibilities for institutional change, the innovation process in the schools may be the most important learning process for both teachers and students, and others who participate in it.

An innovative support structure is also required to assist in the process of innovation. Local teacher centres may be one form of mechanism, already successfully implemented in some countries; research and development centres are other important resources; and a national information network that can be used by students, parents, teachers and the managerial group is highly desirable.

A national discussion of priorities and means in a critical analysis of the present educational structure is needed before precise strategies for innovation are chosen.

Chapter I

INTRODUCTION

Over the past 30, 40 or 50 years, change has become part of our everyday life. Our expectations have changed accordingly. The last 20 years in particular have seen remarkable innovations in nearly all aspects of human activity; and the basic attitude which has been the driving force in all our advances in the economic, scientific and technological fields, has been an attitude of optimism, a belief that improvement is possible.

Social institutions, education included, have also undergone change. We have seen a drive towards a better quality in our institutions, an attempt to close the gap of social and educational inequality, major investments to extend educational opportunity, and large-scale pedagogical reforms to improve the quality of instruction. As Robert Oppenheimer pointed out in 1955, the extent of these changes created a need for social reform:

> "In an important sense this world of ours is a new world, in which the unity of knowledge, the nature of human communities, the order of society and culture have changed and will not return to what they have been in the past. What is new is new not because it has never been there before, but because it has changed in quality."(1)

Development in this period has partly been guided by a young but ambitious and fast-growing social science. The drive towards better social institutions, which was characteristic of the 1950s and the 1960s, was based largely on the view that social organisations, though complex and large, could drastically improve their quality in much the same way as had happened in other fields, such as medicine or agriculture, provided they were supplied with adequate resources and skills.

Facing the 1970s, one has a feeling that the reform movement has itself undergone a form of change, both in quantitative and

qualitative terms. We no longer assume that there is any perfect correlation between increased resources and better quality. Increasing enrolment, giving educational opportunities to a large number of students, does not necessarily produce either equality or quality. The development of well-validated teaching-learning systems, soundly based on research, and seemingly far better in "quality" than traditional instruction, does not necessarily result in better classroom practice. Similarly, the shift of decision-making power, for example from central to local authorities, does not always improve the quality of decisions, or encourage creativity or even increase public concern for education.

The research community has come to recognise the immense and complex problems involved in changing large social systems. Education, being one of the largest of human enterprises, is certainly experiencing all the pains connected with the increasing demand for improvements and the meagre results of large-scale reform efforts.

In most of the economically and technologically advanced western countries, we are in the middle of a switch from "educational optimism" towards "educational realism". Consequently the results of the attempts to reform education throughout the 1960s are being analysed carefully; the various conflicting objectives and demands inherent in the reform movement are under discussion; and the search for new strategies for educational innovation has become a matter of central concern.

Following a conference on the Management of Innovation in Education held in Cambridge in 1969(2). CERI organised a series of case studies of innovations in some exemplary settings at central, regional and local level. This volume is an attempt to synthesise and analyse the major findings of these studies.

From the discussions in Cambridge it was clear that the first general area that needed examination and elucidation was the concept of change itself: how to recognise and how to evaluate it, particularly in relation to certain directions and goals. Very often, what we think of as an innovation in education is only a superficial reshuffling of priorities or activities, underneath which things go on much as before. Alternatively, a real change may have unforeseen or undesired results. Furthermore, attempts to innovate sometimes come about as hasty and unthinking reactions to crisis, with little thought of what the long-term or even the short-term results will be. It is for these reasons,

among others, that the stated goals of educational systems often are not met. If goals are to be met, it is necessary to be able to recognise what the real needs of a situation are, then to recognise a solution that fits the situation, then to recognise whether the solution has actually worked. An integrated body of knowledge upon which to base such judgements does not at present exist.

The process of innovation also needs examination. Various theories have been advanced to explain how change comes about (see Chapter II); yet despite such theoretical knowledge, little is actually known about the factors which set the process of change into action. The benefits and the beneficiaries of any change are frequently not immediately apparent. Knowledge of the critical elements in success or failure is lacking. Because of these gaps in knowledge, innovation in education is frequently a trial and error process in which little attention is given to procedures which would maximise the chances of success. Thus, time, energy and money are wasted.

Another area of which not enough is known is the role played by administration and institutions in bringing about change in education. Some countries have established mechanisms and strategies for change in education, and these have had varying success. It would appear that those who see change as only, or primarily, a legislative process have not had marked success (see Chapter VIII). Other procedures or strategies working on a different basis have frequently been more successful, at least within the constraints imposed upon them by time and place. Not enough is known, however, about why these latter strategies have succeeded, or whether they are transferable in part or in whole to other regions or nations.

Similarly, the different roles played by individuals, including leadership roles, need examination. In particular CERI was interested in how the process of innovation could be made meaningful for every individual who participates in the process. Is it possible to organise the process without conflicts, or are crises inevitable in the process of innovation? Is it possible to reach consensus and create a new equilibrium in the system? What is, after all, the ultimate objective of educational innovation? Would the process of innovation be the same regardless of what type of innovation we are dealing with? Certainly there seem to be different considerations, depending on the nature of the thing to be changed and also on the objectives or intended outcomes of the innovation process.

Educational systems in Member countries differ considerably as a result of their different histories and different political, social and economic conditions. The process of innovation necessarily has to be related to these different conditions. Is it possible to identify how initiatives and decisions on specific innovations are most likely to succeed?

A main factor in CERI's decision to carry out these 17 case studies was the feeling that existing knowledge did not contribute enough to a comprehensive understanding of the process of innovation and its management. There are hundreds of studies of change, many of them concerned with change in education. The weakness of these studies, however, is that few of them are of an empirical nature; few are related to specific educational conditions; little is known of the role which different organisations can play in the process of educational innovation; little - if anything - is known of the interrelationships between different decision-making levels in the educational system as they affect innovation; and few studies have analysed the term "innovation" itself and the implications of its interpretation for the management of the innovation process.

In these circumstances, CERI saw as its task to bring together knowledge derived from empirical studies, in such a form that it could be used as a guide for Member countries in determining policies for innovation in education.

CATEGORIES OF STUDIES

The purpose of the case studies was to understand how educational change is taking place in selected, exemplary settings. Specifically, the purpose of the case studies was to develop knowledge of the planning, strategies, mechanisms and management patterns employed in innovative schools, innovative regions, and central institutes for educational innovation. The case studies were designed to describe these major modes of operation, and therefore concentrated on:

i) the management of the innovation process;
ii) the management of the internal social system in support of the innovation process;
iii) the management of the relationships with the external environment insofar as it affects the innovation process.

The first category of studies comprised the studies of central institutions for educational innovation. The idea of a central institute for educational innovation is new, and the establishment of such institutes is itself a significant development. The significance lies in the fact that the establishing of such institutes indicates both a recognition at the national or state level of the need to innovate in education and also an interest in so doing. Planning and striving for educational innovation is now seen as part of the function of central government. Though such central institutes are generally in their infancy and are not widespread among Member countries, their potential impact on the pattern of educational change and the speed at which it occurs is considerable.

However, the precise role of these institutes and how they should function are questions to which no clear answer is yet available. Consequently, the overall objectives of the studies of central institutions concerned with educational innovation were to understand how they define their role in the process of educational innovation and how they attempt to carry out this role. The institutions were chosen so as to reflect the many different possibilities of role and function, ranging from national councils for innovation to large-scale research and development institutions, all of them, however, set up to improve educational practice throughout the country or state.

The second category is the studies of innovative regions. "Region" was defined geographically and politically as an area comprising territory marked off for special administrative purposes; "innovative" indicated areas in which innovation has taken place and continues to take place. Such regions are in the forefront - nationally at least - of those who apply advanced solutions to educational problems. They are not usually, nor necessarily, the source of new or advanced solutions to major problems, although this activity may be carried out to some extent; clearly, however, they are leaders in application. A good deal is known about some of the characteristics of such regions. What is only vaguely known is the strategies or procedures which such regions have evolved, both to initiate innovation and also to manage the continuous innovation process. It is this dual problem that lies at the heart of the case studies of the regions.

The third group of studies is the studies of innovative schools. An innovative school is not the same as an experimental

school or a school which has at some time been identified with a particular innovation. By innovative schools we mean a school which is continuously able to improve its own practice. As in the other categories, innovation does not necessarily stand for something new - universally new - but something which is rather new and better for a particular institution or social system. An innovative school, therefore, may well be in the process of adopting and adapting new solutions from other schools; but the important feature about the school is that it is able to improve its own practice on an on-going basis.

"The change process" in education is not an easily defined process. What type of change are we talking about? Do we restrict ourselves to the narrower definition of "classroom changes", or do we include all types of changes that might be defined as innovations connected with changes in society at large? If, for example, one were to consider what factors have had the most significant influence on education in the past 40 years, one would probably find that major changes in society have played a more important role in educational practice than any planning, research or development within the education system - irrespective of whether these have or have not been understood or taken into account by educational or political leaders.

We recognise that many of the most significant changes in education have their roots in changes beyond the control of education (both politically and administratively). Although significant changes originate outside the educational system, it does not necessarily follow that they are beyond the control of education. One can argue, for example, that the relative decline in teachers' salaries and status which has been observed during the last 30 years in some Member countries, has had a more significant influence on the quality of education than any curriculum reform. This may be right (though we do not know); but even more important is the observation that this is not simply due to changes beyond the control of education, but is due to the lack of comprehensive strategies for innovation which take account inter alia of the reward-system of teachers.

When we argue, therefore, that many changes seem to be beyond the control of education, we do at the same time realise that many crises and problems in education might have been avoided if the process of innovation had been better understood, and if full account had been taken of the relationships between education and society. We have not taken the "unplanned" changes into

consideration in this study, but we have considered how far the central, regional or local educational institutions have themselves taken account of these considerations in their work.

A study of the three levels of education (central, regional, school) is too limited in many ways to achieve a full understanding of the change process. There are many other institutions and influential groups which have a significant effect. For example, one could look at the role of teacher unions, the role of mass media, the influence of informal education, or the role played by national or international pressure groups. The rationale behind the selection of the three levels of educational practice is that somehow or other the influence of all other groups has to be translated through one or more of these institutions. They are in different ways responsible for the educational practice. What we are studying, therefore, is not the role of teacher unions (for example), but the way in which the influence of these unions has an effect on the work in the institutions studied.

SELECTION CRITERIA, METHODOLOGY AND TIMING

A main objective of the studies was to gather empirical facts about the process of innovation. Such data are lacking from many of the studies of innovation which are currently available. The present studies, however, cannot be regarded as definitive. As already suggested, they are designed to provide preliminary data and perspectives upon the process of innovation, and some of their limitations are best considered at this stage.

It is more or less impossible from the very nature of the problem to select sites on a representative basis. There are not very many central institutions, for example, that can be chosen. Finding out where innovative regions and schools exist in 20 Member countries is another major problem. None of the institutions that were chosen for this study is perfect in any sense; all have problems, and one of the purposes of the case studies is to clarify these problems.

The examples were chosen from a relatively small sample of institutions through interviews and informal contacts, having the above-mentioned objectives and definitions in mind. After careful consideration and a full use of informal contacts, the following list of central institutions, regions and schools, was agreed upon, each of them having been chosen in the light of the criteria already established.

1 - AT THE CENTRAL LEVEL

	Study	Researcher
1.	The Schools Council, United Kingdom	John Nisbet
2.	The Ontario Institute for Studies in Education (OISE), Canada	Francis S. Chase
3.	The National Council for Innovation in Education (NCIE), Norway	Sixten Marklund, Eskil Bjørklund
4.	The New Jersey Administration, United States	Michael D. Usdan
5.	The National Board of Education (NBE), Sweden	Oddvar Vormeland
6.	The Bavarian State Institute for Educational Research and Planning, Germany	F.E. Weinert, Heribert Simons
7.	Research for Better Schools Inc. (RBS), United States	Leon Ovsiew

2 - AT THE REGIONAL LEVEL

1.	Leicestershire, United Kingdom	Brian Holmes
2.	Devon, United Kingdom	CERI Secretariat
3.	Wetzlar, Hesse, Federal Republic of Germany	Helga Metzner, Gunther Probst
4.	York County Board of Education, Ontario, Canada	Jan J. Loubser, Herbert Spiers, Carolyn Moody
5.	Malmö, Sweden	Wolfgang-P. Teschner

3 - AT THE SCHOOL LEVEL

1.	Countesthorpe College, Leicester, United Kingdom	Gerald Bernbaum,
2.	The Experimental Gymnasium, Oslo, Norway	Trond Hauge
3.	Thornlea School, Ontario, Canada	Michael Fullan,
4.	Rødovre School, Rødovre, Denmark	Tom Ploug Olsen
5.	Tapiolan School, Tapiola, Finland	Lyyli Virtanen

These studies have been published by CERI in 1973 in three publications under the following titles:

Case studies of educational innovation

1. At the central level
2. At the regional level
3. At the school level(3)

CERI worked out a common research outline and relevant guidelines for the whole project within the Secretariat during the summer and autumn of 1970. In the same period, planning, selection of sites, agreement with national authorities, institutions and researchers was completed. In December 1970 a pilot project was undertaken by Professor Richard O. Carlson who also assisted in the design work during the autumn. In January 1971 a research seminar was conducted in Norway to discuss and refine the design and most of the researchers participated in the seminar. In Annex II(4) an example is shown of the guidelines for the researchers which they worked out in co-operation with CERI staff. The same kind of outline was used for all three types of studies. In the period from February to April, the field work was carried out in all sites and the first reports were delivered in May 1971. During the summer and autumn of 1971 the revision of the reports was completed.

Chapter II

A THEORETICAL FRAMEWORK

The purpose of this chapter is to present a theoretical framework for the case studies and for the analysis of their findings. We start by defining the terms which we shall use, taking into account the different functions which the terms have come to perform in the cultures studied.

Subsequently, we examine some of the contributions of recent research literature to the issues which are our main concern in this volume and we review critically some of the major theories, models and approaches which have been adopted in the attempt to explain social change and innovation.

In particular we put forward a specific model of innovation in education as a basis for analysis and discussion of certain major questions which arise in our study of strategies for innovation in education.

DEFINITIONS

In the last decade the number of research studies on change in various fields has run into the hundreds. Everett M. Rogers and Floyd Shoemaker have summarised some 1,800 publications, including many which deal with the diffusion of innovations(5). Michael Stuart and Charles Dudley in their Bibliography on Organisation and Innovation(6) have listed about 650 entries. Norman D. Kurland and Richard I. Miller include approximately 170 entries in their Selected and Annotated Bibliography on the Processes of Change(7) and Ronald G. Havelock has approximately 4,000 entries in his Bibliography on Knowledge Utilisation and Dissemination(8).

Though all these works focus on change, none contains a complete list of all the work on the topic. Most of the publications

mentioned above refer to American settings, except for Rogers and Shoemaker who include many studies from developing countries. When one adds to these the studies which have been done in Europe, the variety of results and interpretations is all the more evident. In particular, because different studies use terms in different ways the definition of terms is seldom as clear as would be desired. In a comparative study such as this, therefore, some cross-nationally valid definitions are necessary if the topic is to be tackled in a meaningful way.

THE TERM "INNOVATION"

The term "innovation" seems to have different meanings in different cultures, and is also used with different meanings in the research literature. It is necessary to clarify what we mean when we use the term innovation, particularly in relation to the term change, and in speaking of planned innovation versus unplanned innovation. Since innovation in education may cover anything from a new school system to a new textbook, it is necessary also to define what types of innovation we are concerned with.

CHANGE AND INNOVATION

Guba(9) has suggested the following definition of change:

> "There are some perceptible differences in a situation, circumstance or a person, between some original time t_o and some later time t_i."

The term innovation is often dealt with in the studies more or less in the same way as the term change. Barnett(10) has given the following definition:

> "Innovation is any thought, behaviour or thing that is new because it is qualitatively different from existing forms."

Other definitions tend to concentrate on the adoption and diffusion of innovations. These definitions distinguish between "a new idea" and its "operationalisation". Thus, Beal and Bohlen(11) have given the following definition of innovation:

"A change which involves not only a change in materials but also a complex of changes with regard to their use."

Other definitions describe innovation as a process - for example, Niehoff(12):

"A process that begins with an idea on the part of a change agent and ends in its adoption or rejection by the potential recipients."

In the same way, Richland(13) has given this definition:

"A creative selection, organisation and utilisation of human material resources in new and unique ways which will result in the attainment of a higher level of achievement for the defined goals and objectives."

The comment of Havelock(14) on innovation is relevant here:

"There is nothing inherently valuable or good in innovation, as such. We innovate whenever we try anything new, when we inhale a cigarette for the first time, when we first teach a class without bothering to prepare for it, or when we discover that we can cheat on a test and get away with it. Usually, of course, when we use an expression like 'innovation in education' we think we are talking about something more positive, a change for the 'better', or something that is both new and beneficial. Even so, we may have a tendency to slip into the assumption that something is good because it is new or different from what we have done before. Many observers have noted that education (in the United States) is prone to this sort of faddism, the mass adoption of one innovation after another without regard to either its demonstrated value or its potential consequences, positive or negative."

This point is one which has been taken up in recent literature, particularly in dealing with education. Innovation is looked upon as change - as described above - but with a specific qualification, that it is brought about deliberately to improve practice in relation to certain stated objectives.

Marklund, in a recent study for the OECD(15), makes the following distinction between innovation and change:

"The term innovation as used in school and teaching is often synonymous with the term change. If this change is on a broad scale and affects an entire school system, one

frequently speaks in terms of a reform. It would be incorrect however to refer to every change as an innovation. It must imply an improvement towards a predetermined objective. Innovation always presupposes one or more qualitative criteria."

Miles(16) says:

"Generally speaking it seems useful to define innovation as a deliberate, novel, specific change, which is thought to be more efficacious in accomplishing the goals of a system."

Brickell(17), in his process definition of innovation, implies a goal-directed or value-directed improvement in the term:

"The entire process of generating a new form of educational practice (along with the concepts underlying it and the materials needed to execute it), trying it in small-scale laboratory settings to get information for the purpose of redesigning it, testing it in a variety of field settings (to discover what it will do under normal conditions, and disseminating it to prospective adopters (to inform and aid them in adopting it). Adoption, which must accompany dissemination (dissemination is sending; adoption is receiving), is also included in the definition."

In our use of the term innovation we mean a deliberate attempt to improve practice in relation to certain desired objectives. This, however, does not exclude innovations which are also concerned with the shaping of new objectives, or policies or functions not related to old objectives. Most studies of educational innovations, however, are concerned with relatively small adjustments of old practices, replacing them by new methods, organisational arrangements or personnel policies. The innovations are not concerned with a redefinition of objectives, but rather with a redefinition of the operationalisation of old objectives. The result is the development of "change-models" and "theories" building on consensus and resulting in management techniques based on behaviour modifications (e.g. sensitivity training), seldom exploring the underlying assumptions and ideologies implicit in the approach.

When we say a deliberate attempt we usually mean a planned attempt. Planned innovations, however, usually imply specific and often technocratic planning procedure which is not always necessary

for innovations to occur. We do not, therefore, imply that innovations always originate in a "planning-research-development-diffusion" process. Some innovations may well be just deliberate policy decisions based on practical experience. In most cases, however, as seen in this study, the process of innovation implies a complex interplay of activities including most of the steps usually mentioned under a "planning-research-development-diffusion" process.

Herzog(18) criticises planned change on three grounds. He feels that most approaches to the concept

> "(i) are naively profession-o-centric, (ii) view schools as objects to be manipulated, and (iii) fail to recognise that most people are attached to whatever they are currently doing because they believe in the value of it, not because they are resistant to change."

In our definition of innovation, we do not imply necessarily the traditional definition of a planned change process, which very often has been open to Herzog's criticism.

We have included in our definition a specific qualification, i.e. that innovation is something <u>better</u> than what it replaces. "Better" for <u>whom</u>? Is it possible to imagine innovations that are better for everybody, that every individual or group will benefit from the innovation process? If someone does not benefit, is conflict then inevitable? Innovation, as we have defined it, may well mean improvement for some (e.g. students) but may not alter conditions for others (e.g. other students or teachers); and it may even worsen conditions for others again (e.g. parents, State finance, or even other students). Discussions of innovation, therefore, should include not only a careful definition of <u>what</u> improvement has resulted but also <u>who</u> has gained. (See Chapter VI)

A TYPOLOGY OF INNOVATIONS

Innovations in education are now beginning to spread over the whole area of educational activities. Since we are concerned with innovations in eight different countries, the need for clearer distinctions between types of innovations is obvious in order to identify the process within the variety of innovations which we are dealing with. It is not, however, possible to draw rigid lines between activities. Innovations in complex social systems

are highly interrelated. Therefore we have to look for the main intended objectives of an innovation when we make up a "typology" of innovation. A variety of distinctions has been suggested in the literature reflecting differences in the basic philosophy of education as well as in specific interpretations of the innovation process.

Marklund(19) has mentioned three levels of innovation:

"Level 1: The external structure of the school, above all in respect of the number of grades, stages and divisions into different courses of studies.

Level 2: Timetables and syllabuses with aims and content of subjects or groups of subjects.

Level 3: The teacher's instructional methods, the pupils' way of working, educational materials, study material and forms of evaluation."

These three levels of innovation suggested by Marklund are of interest because they reflect a hierarchical understanding of the process of innovation, closely related to a policy-oriented approach. They do not include innovations which are concerned mainly with a change of educational objectives. In Marklund's definition, of course, this is basically a political process and not an innovation process.

Goodlad(20) has also defined three levels of curriculum development, a political, an institutional and an instructional level.

Miles(21) describes eleven samples of innovations:

"organised according to the aspects of a social system with which they appear to be most clearly associated."

1. Boundary maintenance operations;
2. Size and territoriality;
3. Physical facilities;
4. Time use;
5. Goals;

6. Procedures;

7. Role definition;

8. Normative beliefs and sentiments;

9. Structure (relationships among parts);

10. Socialisation methods;

11. Linkage with other systems.

At this stage it is useful to return to our distinction between innovations which are basically concerned with new objectives and functions of education on the one hand, and innovations concerned merely with the introduction of new practices within the already established framework.

Later we shall draw a distinction between the formulation of an innovation (i.e. new objectives), the adoption of this innovation, and the implementation in practice of the innovation (i.e. institutionalising change). In this study we shall be concerned with all three aspects of innovation as they relate to the institutions studied.

For the purpose of this study, we have developed the four categories of innovation which are described below. They are obviously highly interrelated (as we shall see in many subsequent examples). In all categories we distinguish between:

a) the overall educational system (various levels and interrelationships between levels) - the general level

b) the individual school and its environment - the institutional level.

Category 1: Objectives and functions:

Innovations mainly concerned with the objectives and functions of the school in its broader social and economic context

Examples of this category of innovation at the general level are the Scandinavian comprehensive school reform, "model city" programmes in the United States (which imply increased enrolment of socially disadvantaged groups and a redistribution of resources), integration of special education in the ordinary school system (e.g. in Norway) which imply a redefinition of its functions, the integration of vocational training and general education (e.g. in Sweden and Norway), and new developments such as career education programmes in the United States which redefine objectives and

functions of the school system in relation to the economic system.

At the institutional level there are fewer examples of innovations in this category. One type, however, is the attempt in nearly all the countries studied to redefine the functions and relationships between the school and its environment(22).

Category 2: Organisation and administration:

Innovations mainly concerned with the organisation and administration of the educational system: also included here are the control, the finance, the decision-making and the supply of logistics.

Innovations in this category are clearly concerned with the development and implementation of new practices within a given policy framework. They are method-oriented. This does not mean, however, that they are unrelated to objectives. On the contrary, they are defined in terms of stated objectives and subordinate to these objectives.

There is obviously a great variety of examples of this kind of innovation, both at the general and at the institutional level. They range from new management procedures, techniques for administrative control, organisational patterns for co-operation between institutions, participation in decision-making, redefinition of administrative responsibilities between levels of administration, and the reorganisation of instruction.

Category 3: Roles and role relationships:

Innovations mainly concerned with role definitions and role relationships

Again, these innovations are related to objectives and are method-oriented. There are clear relationships with Category 2 (organisation and administration) but the object is not to improve techniques and procedures, but to improve the roles which individuals perform, and the relationships between individuals and groups.

Ideally speaking there is no real innovation in Category 2 without a subsequent innovation in this category, and vice versa. In practice, however, this is often overlooked. Administrative rearrangements are introduced without careful consideration of the implications for individual roles and role relationships. On the other hand, changes in role relationships (e.g. between teachers and students) occur without necessary administrative and

organisational arrangements. There are examples where links between these categories are not necessary, but in most cases they are.

Innovations in this category range from new role relationships between teachers and students, teachers and administrators, school personnel and researchers, school personnel and local, regional and central administration, to a redefinition of operational tasks implying new responsibilities (e.g. a new teacher role) or the introduction of new roles (e.g. a "change agent").

Category 4: Curriculum:

Innovations mainly concerned with curriculum, its aims, content, methods, evaluation, material and internal organisation of instruction

The term "curriculum" is understood quite differently in the countries studied, ranging from a concept that includes almost everything (including Categories 1 - 3) to a strict definition of "teaching plans" (lærerplan), as in the Scandinavian guidelines for the instructional process. We will use the term here as identical with the teaching-learning process, including the elements mentioned in the definition given.

Innovations in curriculum are concerned with aims, but only as an operationalisation of broader objectives (see Category 1). Most of the innovations considered in this study fall into this category.

We have deliberately not drawn a line between "political" and "professional" matters. Presumably, innovations in Category 1 (objectives and functions) would traditionally be looked upon as political. However, we take the position in this study that all innovations are political in the sense that they are value-loaded and influence the lives of individuals in one way or another. All innovations are also professional in the sense that they imply the use of general or specialised knowledge in a systematic way.

STRATEGIES OF INNOVATION

Is it possible to identify different ways in which innovations as defined above can be formulated, developed and implemented? If complex social systems like the educational system are required

to change for certain reasons - how does it happen? Can such a process be planned, stimulated, guided and evaluated?

. We have chosen to adopt the concepts of strategies as originally presented by Chin(23). In a later work Bennis, Benne and Chin(24) revised and expanded this original paper. Their analysis is chosen because it is comprehensive and seems appropriate for our use. We shall try to clarify the main implications in each of the strategies which Bennis, Benne and Chin outline, noting the specific characteristics and the assumptions involved. We will also exemplify these main strategies with some of the illustrations which Bennis, Benne and Chin have given in their study.

Havelock(25) proposes a similar clustering of theories and strategies of innovation under the headings of "Research-Development-Diffusion", "Social Interaction", "Problem Solving" and "Linkage".

First, it is necessary to consider more generally how the term strategy is to be defined. Again a variety of definitions is to be found in the literature.

The Third Area Conference for Planning and Effecting Needed Changes in Education(26) made the following suggestions about strategies:

> "Strategies of Change is interpreted as including, but not limited to, dissemination and provisions for utilisation of pertinent information regarding all aspects of the proposed plan: ways of identifying and dealing with internal and external (environmental) constraints as well as facilitating influences: ways of identifying potential opposition, conflicts and tensions and of resolving them advantageously: appropriate means of helping individuals, organisations and agencies to effect needed change in their perspectives: and procedures (guidelines) for implementing proposed change."

Strategies by definition are related to the objectives of a certain innovation. Several considerations should be taken into account.

Thus, Guba(27) suggests:

> "Any strategy would need a consideration of the following elements:
>
> i) Assumptions concerning the nature of the practitioner who will be exposed to the strategy.

ii) Assumptions concerning the end state in which one wishes to leave the practitioner.

iii) Assumptions about the nature of the agency or mechanism carrying out the diffusion activity.

iv) Assumptions concerning the nature of the invention."

The term "strategy" has been borrowed from the military field. It has usually implied a strategy "from above". The term is therefore somewhat misleading when strategies other than hierarchical are included in the concept.

Strategies for innovation, as used in this study, is a broad concept meaning all available procedures and techniques used by individuals or groups at different levels of the educational system to reach desired objectives.

There are some common elements in all strategies for innovation. One element is the conscious utilisation and application of knowledge. This knowledge may be a knowledge of "things" used in controlling some part of the environment, or it may be knowledge about people, which is used to help to understand the behaviour of individuals and groups in introducing innovations. Very often in education a specific "thing-oriented" innovation, such as a new curriculum, for example, not only implies knowledge about this specific innovation but also involves the use of behavioural sciences to understand the process by which educators, students and the entire educational system accept new curricula.

Bennis, Benne and Chin(28) identified three major strategies for innovation:

1) Empirical-rational strategies;
2) Normative-re-educational strategies;
3) Power-coercive strategies.

EMPIRICAL-RATIONAL STRATEGIES

The underlying assumption in these strategies, as defined by Bennis, Benne and Chin, is that man is reasonable and will act in some rational way. The primary task of the innovator, therefore, is to demonstrate through the best known method the validity of a certain innovation in terms of the increased benefits to be gained from adopting it. An innovation is usually proposed by some

person or group that knows the effect and also knows the person, group or organisation that will be affected by the innovation.

Obviously this strategy is based on an optimistic view of human beings. It can be found throughout the whole Western world. It is the basis for liberal practice and empirical research as well as general education.

Some of the basic empirical-rational strategies, as seen by Bennis, Benne and Chin are discussed below:

i) Basic research and dissemination of knowledge through general education: This strategy of innovation is, of course, still the most common strategy in the Western world. The underlying assumption is that innovations will most probably occur through the actions of people and that people will innovate as soon as their basic understanding is altered.

ii) Personnel selection and replacement:
Very often the difficulty of ensuring innovation is looked upon as a personnel problem. The strategy of especially selecting personnel for a given task was given a scientific "boost" by the development of scientific testing of potentialities and aptitudes.

This approach has often been used to maintain a system in accordance with the interests of the people in power rather than to change the system for the benefit of the individuals and groups involved. In many cases, also, focusing on the personnel problem has made it impossible to reveal difficulties inherent in the social and cultural system itself.

iii) Systems analysts and consultants:
An emerging strategy is the use of behavioural scientists as "systems analysts". This approach regards innovation as a wide-angled problem in which all the input and output features are considered. The application of educational technology to curriculum development comes closest to this school of thought. The approach is based upon an "equilibrium model", transforming a system of some discomfort into a system "in harmony". Usually the question of redistribution of power in the system is not taken into account, and the continuance of present structure is taken for granted.

iv) Applied research and linkage systems for diffusion of research results: The best known example of this approach is to be found in America in the land-grant university and the agricultural extension system. The idea was to link basic research with

applied research and with professional practitioners, very often through demonstration centres and field experiments. This system developed extension services, and county agents and practitioners were attached to the demonstration centres or the land-grant colleges; from this the idea of "change agents" developed.

Recently in education, similar attempts have been made in America (as well as in Europe) to link applied research activities with basic researchers on the one hand and with persons in action and practice settings on the other. This can be seen in particular in the creation of research development centres based in universities and the regional laboratories connected with State departments of education, colleges and universities in a geographical area, and with various consortia and institutes which tackle problems of innovation.

Bennis, Benne and Chin(29) say about this approach:

> "The questions of <u>how</u> to get a fair trial and <u>how</u> to instal an innovation in an already going and crowded school system are ordinarily not built centrally into the strategy."

The rationale behind this is that if an innovation can show that it can achieve what it is supposed to achieve, the consumer will adopt it. (Further developments in this area will be discussed in the case of Research for Better Schools, Chapter III)(30).

v) <u>Utopian thinking as a strategy of change</u>:

In the last few years a number of projects have been set up to study the future of education; for example, the Eight-State Project(31) and the Europe Year 2000(32). In both public and private organisations futurology seems to have emerged as one approach to innovation in education.

Basically this approach builds on present knowledge in an attempt to "forecast" the future. It implies that the future (which commonly is presented as "alternative futures") will be based on trends and tendencies which can be observed today.

The underlying assumption behind the empirical-rational strategies is that research is "neutral" and "objective". This model of social science research is taken from the natural sciences. The model defines the researcher as an "observer". Philosophically it is idealistic and closely related to positivism and classical liberalism (see Chapter VII).

Since the strategy by definition excludes the question of

values and ideologies and assumes an "objective" position, the process of innovation can be defined as a "knowledge utilisation process". If "knowledge" were accepted and utilised in this simple and direct manner, it would have tremendous impact. We know, however, that knowledge in the social sciences is not identical with power, since we know much more than we are able to put into practice.

The definition of "empirical-rational" which is implied in the discussion above would be regarded as a rather narrow definition by many researchers. Also, the approach seems to build on a "consensus-model" which is not necessarily the only basis for empirical-rational strategies.

NORMATIVE-RE-EDUCATIVE STRATEGIES

Normative-re-educative strategies of innovation develop from theories which can be traced back to work of Sigmund Freud, John Dewey, Kurt Lewin and others. Their basis is to regard as of central importance the question of how the client understands his problem. The problem of innovation is not a matter of supplying the appropriate technical information, but rather a matter of changing attitudes, skills, values and relationships. Change in attitudes is just as necessary as change in products. Acknowledging the client's value-system implies less manipulation from outside. Innovation is defined as activating forces within the system to alter it.

As we can see, these assumptions about human motivation differ from those underlying the rational-empirical strategies. Bennis, Benne and Chin(33) say about this:

> "These strategies build upon assumptions about human motivation different from those underlying the first. The rationality and intelligence of men are not denied. Patterns of action and practice are supported by sociocultural norms and by commitments on the part of individuals to these norms. Sociocultural norms are supported by the attitude and value systems of individuals - normative outlooks which undergird their commitments. Change in a pattern of practice or action, according to this view, will occur only as the persons involved are brought to change their normative orientations to old patterns and develop commitments to new ones. And

changes in normative orientations involve changes in attitudes, values, skills, and significant relationships, not just changes in knowledge, information or intellectual rationales for action and practice.....

"Intelligence is social, rather than narrowly individual. Men are guided in their actions by socially funded and communicated meanings, norms and institutions, in brief, by a normative culture. At the personal level, men are guided by internalised meanings, habits and values. Changes, not alone in the rational informational equipment of men but at the personal level, in habits and values, as well as at the socio-cultural level, are alterations in normative structures and in institutionalised roles and relationships, as well as in cognitive and perceptual orientations."

In normative-re-educative strategies a change agent works <u>with</u> the client. He bases his work on the behavioural sciences and his main concern is to identify and bring out into the open and take into account the attitudes, values and opinions of the client. According to this school of thought, the change agent seeks to avoid manipulation of the client by bringing the values of the client, along with his own, into the open, and by working through value-conflicts responsively.

Bennis, Benne and Chin emphasize the involvement of the client in the innovation. It is assumed that the change agent must learn to operate collaboratively with the client in order to solve the client's problems. Non-conscious elements must be brought into consciousness, and the methods and concepts which are used are drawn from the behavioural sciences. Two groups of strategies are mentioned by the authors:

i) <u>Improving the problem-solving capabilities of a system</u>: The stress here is on the potentiality of the client system to develop and institutionalise its own problem-solving structures and processes.

ii) <u>Releasing and fostering growth in the persons who make up the system to be changed</u>: Here the emphasis is on the person as the basic unit of any social organisation. It is believed that persons are capable of creative action if conditions are made favourable. Various methods have been designed to help people discover themselves as persons and commit themselves

to continuing personal growth in the various relationships of their lives.

Emphasis has been placed recently on releasing creativity in persons, groups and organisations to cope with accelerated changes in modern living.

Both these approaches believe that creativity may rise within human systems and does not have to be imported from outside as, for example, assumed in the rational-empirical approaches.

Basically these strategies are not looked upon as a relationship between "knowledge" and <u>something</u> (or someone) to be changed (as in the empirical-rational strategies). On the contrary, the process is looked upon as a <u>dialogue</u> involving a client and a "change agent".

The normative-re-educative strategies build on an idealistic understanding of human beings and an optimistic assumption of the possibilities for meaningful changes initiated by the individual and through the individual. The effectiveness of the strategies is among other things based on the following assumptions:

1) Changes start with the individual and his "attitudes" <u>and not with the social structure in which he is living</u>. A danger may be that the client easily accepts the "status quo" of his environment, and that the type of innovations which occur are merely minor alterations within a certain framework (which is taken for granted).

2) A change agent can operate in a "value vacuum". There is a danger that he may play a "social engineer" role. In some approaches, however, the values of the change agent are made explicit.

3) Changes can happen without any change in power or subsequently any change in power relationships between individuals and groups.

4) The basis for meaningful changes is consensus between different interest groups in the system.

POWER-COERCIVE STRATEGIES (<u>Political-administrative strategies</u>)

The imposition of power alters the conditions within which other people act by limiting the alternatives or by shaping the consequences of their acts. For the European tradition, at least, it

is quite clear that power-coercive strategies, or maybe political-administrative strategies(34), are the best-known ways in which educational systems have been developed and regulated. To what extent these strategies have been taken for granted in an historical and social climate where authoritarian leadership was accepted as the only leadership style, cannot be judged. It may be suggested as a hypothesis that rational and empirical approaches and normative-re-educative approaches reflect mainly the value systems which are commonly shared in some parts of our culture today. Still, political-administrative strategies are very frequently used, both for control and for reshaping the educational systems.

About this approach Bennis, Benne and Chin(35) say:

> "It is not the use of power, in the sense of influence by one person upon another or by one group upon another, which distinguishes this family of strategies from those already discussed. Power is an ingredient of all human action."

They see the differences rather in the ingredients of power upon which the strategies of change depend, and the ways in which power is generated and applied in processes of effecting change.

As further emphasized by Bennis, Benne and Chin, the rational-empirical strategies also depend on power. Information or new knowledge is in itself potential power. The flow of information goes from men who know to men who don't know. Normative re-educative strategies do not deny the importance of knowledge as a source of power. In general, however, the political-administrative strategies emphasize political, legal, administrative and economic power as the main source of overall power. Other coercive strategies emphasize the use of moral power, sentiment, guilt and shame as legitimate.

Educational systems have been accustomed to the use of political-administrative strategies in a variety of ways. Laws have been passed against certain activities or ensuring others, social interaction is controlled by school regulations, economic power is used towards certain ends, for example, as support to one part of a curriculum and not to another.

More specifically Bennis, Benne and Chin mention the following sub-strategies:

i) Strategies of non-violence: This has been and still is one of the main strategies of minority groups for changing the

conditions Schools also have seen this strategy developed by students in recent years.

ii) Use of political institutions to achieve change: Political power has played an important part in all institutional life and will probably continue to do so. In education this has been very much the case, in particular where majority votes have been used to introduce changes into the system.

Those educational systems which still rely on administrative and legal processes as the only basis for innovation, experience the difficulties of getting these actually working in the system. The process of re-educating persons who will have to behave in different ways if the innovation is to be effective, has to be undertaken. The innovation often requires new knowledge, new skills, new attitudes and new value orientations. It may require changes in norms, roles and relationships. These cannot be dealt with in a coercive way.

There are clear differences in the processes of formulation adoption and implementation of innovations as discussed earlier in this chapter.

iii) Changing through the recomposition and manipulation of power elites: Innovations, as seen by those using this strategy, cannot be achieved through consensus, but will always be achieved through conflicts and power redistribution.

iv) Political-administrative related strategies: In education coercive strategies have been used for a number of purposes. The use of selection procedures, both for teachers and students, can be looked upon partly as an administrative strategy. Reward and punishment systems for teachers as well as students is another variant of such a strategy. The use of grants as well as the re-allocation of resources has a power coercive effect on behaviour and in the teaching-learning process.

There is one distinct difference between the political-administrative strategies and the others described above. The ideologies and value differences between interest groups are exposed by the open use of power. Real change is seen as a redistribution of power, and the subjective position of any viewpoint is not hidden.

We see two major problems in this position. Certainly there are differences of interests and in the use of power in education as in all other human institutions. However, concentration on

the differences between interest groups in the struggle for alterations in power distribution might divert energy from other important problems. We take the position that differences in interests can best be understood as different relationships to the material structure in society and its reward system. Alterations in power inside the educational system will probably not alter the basic problems which are common to virtually all individuals working in this system.

The second problem which arises with the political-administrative strategies is the lack of coherence between intention and reality. The strategies indicate procedures for the formulation and adoption of innovations, but we are left with problems concerning the implementation of these policies.

In this study we shall try to analyse the case studies in the light of these three main strategy orientations. As we have already indicated, a specific approach to innovation cannot be described as either empirical-rational or normative-re-educative, or political-administrative, but rather as more or less influenced by all three strategies, depending partly on which stage of the process we are discussing.

A MODEL FOR THE INNOVATION PROCESS

Most of the studies we referred to at the beginning of this chapter have tried to distinguish the critical elements in the process of innovation. Since they have often focused on particular innovative projects and less often on macro-changes in a complex social system, the models have stressed factors such as stages in the planning, development and implementation of a certain project, relationships between the innovators and their environment, different roles in the process (leadership, change agent, evaluator, etc.), and barriers to the introduction and implementation of the innovation.

Nearly all these models fall either into an empirical-rational strategy or a normative-re-educative strategy. In fact they do not differ much either in philosophical orientation or in practical description. One might call these attempts the problem-solving approach. We will present some of the most useful for our purpose, and later propose a model for the innovation process for further analysis in this volume.

The term "model" is not used in any strict sense in this

context. It would probably be better to call it approach rather than model. The difference between a model and a strategy is that the model focuses only on the necessary steps to be undertaken in the process regardless of the environment, while the strategy includes both the steps to be undertaken in the process and also the complex considerations and activities which are linked to the management of this process with its internal and external constraints.

Models for innovations as found in the literature are for the most part either broad generalisations on such a high level that they have little direct value for our understanding of strategies, or they are very much "micro-oriented" and concerned with specific social factors affected by change. In most cases this orientation is concerned with a "theory into practice" model, with the assumption that there is an orderly process from research to development and to its practical use.

It might be appropriate to quote William McClelland(36) in his review of existing change models:

> "It is premature to do more than wish for a general model, let alone a general theory of change and changing. Accordingly, researchers have developed a variety of subsystem models, each of which deals with some aspect of the change process or with some specific setting. Quite understandably they vary widely in comprehensiveness, complexity and elegance."

We shall give two examples of models that are of a broad general nature but which in many ways give a philosophical orientation to the more process-oriented models which we shall describe below.

Bennis(37) identifies three general classes of change models:

i) Equilibrium models: The target here is a defensive social structure. The mechanisms they utilise involve tension release through anxiety reduction and their goal is a conflict-free social structure.

ii) Organic models: The target is problem-solving activities. Mechanisms involve power redistribution and conflict resolution, and their goal is team management.

iii) Development models: The target is interpersonal competence. The mechanisms they utilise are

transformation of values and their goal is authentic relationships.

Chin(38) finds four different classes of change models. Three are much the same as those identified by Bennis, namely "systems and component models", "organic system models" and "development models". He adds a fourth category called "Inter-system models". In this latter category the changes do not aim at a new equilibrium, but rather at a state of dynamic dialogue between interest groups.

Many other authors have developed process-oriented models for change in social systems. Many models focus on the relationship between a change agent and client system. The Lippitt-Watson-Westley(39) model has the following stages:

i) The development of a need for change;

ii) The establishment of a change relationship;

iii) The clarification or diagnosis of the client system's problem;

iv) The examination of alternative routes and goals, establishing goals and intentions of action;

v) The transformation of intentions into actual change efforts;

vi) The generalisation and stabilization of change;

vii) Achieving a terminal relationship.

Similar models have also been developed by Buchanan(40) and, to a certain extent by Caldwell(41), Clark and Guba(42), and Havelock(43).

Havelock(44) has also proposed a "linkage" model in which sub-systems of research, development, practice and consumption are connected to one another by two-way influence and dialogue on both needs and solutions. In Havelock's model, successful innovation depends on the ability of both user groups and resource groups to understand each other and co-ordinate their behaviour for common goals.

Goodlad and his associates(45) currently are developing a change model focused at the level of the local school. It assumes the school as a whole as an organic unit for change(46), involving the principal, teachers, parents, children and the immediate service community. The intent is to have the individual school

become a "self-renewing institution" through a process which they refer to as DDAE: dialogue, decision-making, action, evaluation and then repetition of the cycle. However, in recognition of the fact that change is a lonely process, often resulting in alienation from their peers of those who are endeavouring to change, the individual school is then linked up in what Goodlad and his associates refer to as "the League of Co-operating Schools". The intent here is to build a new social system with a new set of purposes, activities, rewards, and the like, sufficiently strong to offset the conservative social system of which the school is a part.

All the models presented are in some way or another concerned with how changes come about. But is it possible to treat the how-question separately without considering why changes should come about, and in what direction the changes are intended to bring us?

When we introduce these dimensions we are immediately confronted by a political problem. Models which build on an assumption of neutrality, rationality and consensus about change are, in our view, unrealistic. The consequence of a non-political standpoint is not a "professionalisation" of the matter, but rather to veil the realities of any change or innovation.

This question is directly linked with the question of interest groups. Our observations make it quite clear that any innovation of any substance and meaning would involve conflicts, and the process of innovation can only be understood as a process in which different interests, values and privileges are at stake.

A PROCESS-ORIENTED MODEL OF INNOVATION

The 17 case studies conducted in the present project are descriptions of innovations as they occur in 17 institutions at the central, regional or school level. For our purpose therefore we have chosen a process-oriented innovation model, closely related to some of the models mentioned above. In doing so, however, as a point of departure we are fully aware of the inadequacies of such a model to explain more than internal processes in an innovation project. It is our main task to relate our findings to overall strategies for innovation (see below).

We shall describe the following steps in our process model:

i) Problem identification and definition;

ii) Innovation planning;

iii) Innovation programming and development;

iv) Experimentation;

v) Evaluation and revision;

vi) Dissemination and production;

vii) Implementation.

We shall refer to this model later in this volume as the Planning-Research-Development- and-Diffusion model (P-R-D-D model). We could have chosen alternative variations of the steps. A similar model, however, has been evaluated as adequate in recent workshops organised by CERI (Cambridge 1969)(47)(and Leiden 1970)(48) and we believe that it reflects the steps which are most commonly accepted as relevant to the innovation process.

OBJECTIVES FOR THE PRESENT STUDY

The objectives of this study are to use the 17 case studies as a basis for a general discussion of the process of innovation in education, and in particular to explore the following problems:

I. The relevance of the P-R-D-D model in educational innovations

The model builds upon the following assumptions:

a) The process is a rational process;

b) The process is a planned and sequential process;

c) Consensus concerning objectives is a precondition for action.

Task No. 1: to analyse to what extent, and under what circumstances these conditions exist in our cases of innovation.

The model does not differentiate between different types of innovation.

Task No 2: to analyse to what extent and under what circumstances different types of innovation are "processed" according to the model.

The model, like most of the others in the literature, does not take authority structures and decision-making structures into account. The educational system, being a large organisation, is planned and controlled by an administration which usually is hierarchical in structure. In our study we are particularly

interested in the question of how the participation of different interest groups (professional groups, students, laymen) influence the direction of change as well as the process.

Task No. 3: to analyse the effects on the innovation process and on the direction of change of participation of different interest groups in decision-making.

The model does not take personnel policies into account. We should particularly like to see, if possible, the effects of different recruitment policies and reward systems. Leadership in the innovation process will also be analysed.

Task No. 4: to analyse the effects of different personnel policies, and in particular analyse the role of leadership at the different institutional levels.

II Alternative strategies in educational innovations

The above-mentioned tasks are based on the assumption that the most common model for educational innovation in the countries studied, the P-R-D-D model, is inadequate in relation to certain types of innovations (see typology pages 39-41), but is effective in explaining the process under certain circumstances.

Research in education is not necessarily related to the P-R-D-D model. In the light of the data from the case studies a general discussion of alternative roles of research as a strategy for educational innovation will be discussed.

Task No. 5: to discuss alternative roles of research as a strategy or as part of other strategies in educational innovation.

Political bodies, central or local, have always played an important part in the reform of education. These bodies, their functions and their relationship to administrative bodies, have not been the object of our study. The importance of their functions, however, is still a topic for discussion as far as these functions influence the work of the institutions studied. We are particularly interested in the role which political decision-making has in different types of innovation and its relationship to research.

Task No. 6: to analyse the influence of political decision-making on the process of innovation (in each of our four categories of innovation), and in particular the relationship between research and political decision-making.

We shall make the assumption that "the process of innovation" is not one type of process, but that this process as it occurs in different parts of the educational system has many facets and may

even be looked upon as different processes. If this assumption is valid, different individual roles may be performed at different levels of the system, and the different administrative levels may perform different functions in the process (see Chapter VIII).

Task No. 7: to evaluate and compare the process of innovation as it can be studied at different administrative levels of the educational system, and possibly to identify the different roles and salient functions in the process.

The case studies have not been evaluative in the sense of assessing the effects of different innovations throughout the educational system. With our constraints in this study (see Chapter I) such an endeavour would not have been practicable. The 17 case studies, however, have described in some detail about 100 different innovations. In a number of cases, references have been given to national evaluation reports on other relevant material. We have not been interested in a comprehensive evaluation of the innovations studied, for in our opinion this is not necessary for the kind of analysis we are doing. We are, however, interested in the various barriers and unintended effects which have been reported. In our attempt to analyse these effects we have tried to draw some general conclusions about the present situation in educational innovation.

Task No. 8: to analyse various unintended effects and their implications for educational reform.

Chapter III

CENTRAL INSTITUTIONS FOR EDUCATIONAL INNOVATION

Having established, in the previous chapters, the definitions of the various terms which we propose to use, we are now in a position to review the reports which have been gathered in this study of innovation. Each of the three levels of innovation - the central, regional (Chapter IV) and school levels (Chapter V) will be considered separately. At each level, from the reports which have been submitted by the various researchers* we shall examine certain aspects in the descriptions of each of the institutions, in an attempt to identify common or contrasting features.

The framework which will be used in Chapters III-V for this analysis (or synthesis, in that it seeks to bring the various reports together) is as follows: first, an analysis of institutional characteristics, the origin of the institutions, the statutory powers, their objectives and their administrative context; second, the type of innovations to which they give priority; and the process of innovation which they favour.

The types of innovation are classified by the categories of innovation described in pages 39-41 (1, Objectives; 2, Organisation; 3, Roles; 4, Curriculum).

The process of innovation is first related to the P-R-D-D model described on pages 54-55. Specifically in these chapters the assumptions underlying the model will be studied (Task No. 1., p.55), and the relationship between types of innovation and processes, (Task No. 2, pp.55-56).

Having studied the processes and their management we shall analyse the institutions within our framework of political/administrative-normative/re-educative- and empirical/rational strategies for educational innovation.

In our analysis of the central institutions in this chapter in particular we shall review their common characteristics and differences under the following headings:

* See Annex I.

1) How were they created?

(by political bodies, professional bodies, non-educational national or local interest groups)

2) What is their formal relation to the educational system?

(political/administrative decision making, finance, administration, project policies)

3) What do they see as their priorities?

(objectives, type of innovation, development and/or dissemination)

4) What processes and strategies do they employ?

RESEARCH FOR BETTER SCHOOLS, INCORPORATED (RBS)

During the late 1950s and in the 1960s the United States experienced a wide range of educational innovative activities, in particular involving curriculum changes. The National Defense Education Act of 1958 provided for many of the "innovative curriculum packages" that were produced in the 1960s. Ovsiew(49) says that "a quick adoption by school districts of these new programmes was the certain proof that the school districts were desperate for any new educational product that appeared to have fundamental substantive value". This is of interest, in particular, in that the new developments were centrally planned and developed products, while the former tradition had been that the local school districts through curriculum committees could determine their own curricula.

The background was therefore favourable for the Elementary and Secondary Education Act of 1965 (ESEA), by which Federal money was given to innovative programmes throughout the whole nation. In particular, Title IV of ESEA provided financial support for the creation of 20 regional educational laboratories, along with 10 educational research and development centres. Some of the former have since been phased out(50). The Research for Better Schools was one of the regional laboratories established through these provisions.

The concept of the Regional Educational Research Laboratory was not completely clear when it was written into law, but the laboratory was intended as a link between research and development

centres and school districts. The region which Research for Better Schools, Incorporated (RBS) was to serve included a 15-county section of southeastern Pennsylvania, the southern half of New Jersey and all of Delaware.

The mission of RBS was originally stated in a question form: "How can educational institutions produce and offer the scope, sequence and variety of instructional experiences which are truly suitable to the total range of abilities and requirements of students?" The task of RBS was therefore to construct an organisation that could test and develop potential research products and disseminate them to school districts and schools.

RBS has no formal links with the Federal Government or with the State or local authorities - that is no statutory links. It is a non-profit organisation receiving its funds from federal sources and private grants, and has to co-operate with both federal, state and local agencies to get products developed and disseminated. RBS is headed by a Regional Congress and a Board of Directors, representing federal, state, local and university interests.

INNOVATIONS AND PROCESSES

The greatest proportion of work undertaken by RBS falls into the category of curriculum development (category 4)(51). There are two programmes in RBS directly related to curriculum, i.e. Individually Prescribed Instruction (IPI) and Humanising Learning Programme (HLP).

The IPI programme was originally developed at the Learning Research and Development Center (LRDC) in Pittsburgh. Since 1966 RBS has so far invested about 6 million federal dollars in specific development of the IPI. Ovsiew(52) says about the project:

> "Its purpose is to permit the school (so far only the elementary school) to operate a program of instruction which is modifiable to suit the learning needs and characteristics of each pupil."
>
> "The teacher judgments are made on the basis of continuous, objective, recorded analysis of pupil progress which teachers use in their daily planning for each child."

IPI has been developed, evaluated and revised several times since 1966 and is now diffused to thousands of classrooms throughout the whole of the United States.

The Humanising Learning Programme (HLP) is an attempt to construct a curriculum through which children may learn certain skills which schools have rarely attempted to teach directly(53).

"1. Intellectual skills, the higher order cognitive skills, beyond memory.

2. Social skills, the interpersonal and human communication skills.

3. Emotional skills, the affective skills, such as self-awareness and self-fulfillment."

The project concentrates on questions like

"What are the content aspects of teaching others how to think - not the psychology or theory of how we think, but the skills themselves?"

"What kinds of learnings about inter-personal relationships are useful to children; for that matter, to anybody?"

"What kinds of learnings about feelings and attitudes can be fruitfully taught?"

The product HLP is largely a self-instructional curriculum, almost entirely independent of instruction by the teacher and using several media including print, audio-visual tape and other visual devices. The product is not yet ready for definitive evaluation but it is clear that the curriculum has potential for actual use in classrooms.

A very different project in RBS is the Administering for Change Programme (ACP). This innovation fits into our category 2, i.e. "innovations mainly concerned with the organisation and administration of the educational system". Rather than focus on the development of material, this programme is trying to work out better management models for individual schools and school districts. There were a number of reasons for developing ACP(54):

i) innovative educational ideas and products have very slowly been taken up by the schools themselves;

ii) school systems very seldom invent and develop their own alternatives;

iii) the school administration always has to keep the balance between conflicting demands which make it difficult to invent and develop new solutions;

iv) shortage of money makes innovation difficult at the school level;

v) schools in the United States are independent and therefore the diffusion process between schools is slow;

vi) teachers have never been mainly a change agent - they have rather been controllers of educational change;

vii) few schools have maintained a structure for planning and have instead used ad hoc arrangements;

viii) major planning techniques are all of very recent development.

The ACP began with the systematic collection and interpretation of a knowledge base(55). The plan of ACP can be explained through a change continuum theory as a way of viewing and measuring the existing change capability of local school districts(56):

> "The change continuum theory embraces conceptualisation of the change capability of local school districts, development of instrumentation for measuring change capability, development of alternative school district change profiles, and prescription of change stategies for each of the profile groups. The reasoning behind this activity is that there is currently no tested means of measuring the extent to which school districts are capable of making changes."

The major task of ACP is to help school districts develop planning procedures for making comprehensive plans. According to Ovsiew, ACP "is the most ambitious and most revolutionary of the RBS programs".

The process of innovation can be identified according to the model outlined on pages 54-55 of this volume(57): in fact, we find in our analysis that no other central institution fits so well into this planning model. This is of course not surprising since the laboratories, and possibly RBS in particular, had been looked upon as a prototype of a "P-R-D-D institution". Ovsiew(58) has characterised the principles underlying IPI, which to a large extent reflects this process:

"1) Detailed specification of educational objectives.

2) Organization of methods and materials to attain these objectives, including a variety of paths for attaining mastery of any objective.

3) A procedure for the diagnosis of pupil attainment stated in terms of educational objectives.

4) Individual daily evaluation and guidance for each pupil, including a system for prescribing the specific learning task each pupil is ready to undertake.

5) Provision for monitoring of pupil performance in order to inform both the pupil and the teacher of progress toward an objective, and

6) Continual evaluation and strengthening of curriculum and instructional procedures."

How is this model working in practice? When the RBS started to construct its programme one of the major planning difficulties was obviously an agreement about priorities or a problem identification and definition that would clarify what the priorities should be for the programme.

For many reasons this was very difficult:

1) The educational needs of the region were so complex that an inventory of them only complicated the choice of programme. No area of education did not appear to need innovative programmes.
2) There were no criteria available for deciding priorities among so many needs.
3) With the specific purpose of a laboratory, the innovators were uncertain whether they should develop a completely new project or diffuse the existing innovative programme which had acceptable characteristics.

In the identification of problems and needs, RBS therefore found itself in a very difficult and conflicting situation. The Office of Education (Washington, D.C.) had required an inventory of needs to be included with the planning document on which the first funding was based. At the same time pressure was building up to provide service for the schools. Ovsiew(59) comments:

> "Importunings from the field had to be resisted. Whatever integrity the laboratories could claim, whatever worthwhile mission could be accomplished with their modest budgets, depended on using their money and talents to develop substantive inventions".

In many ways it would be correct to say that RBS itself initiated its programme, though only after full discussion of present educational needs and priorities. The organisation went through a planning period that allowed for the full use of the advantages of conflict. In particular, these conflicts arose from the different expectations the community had, and the RBS staff had, about its mission. The school system perceived RBS as a new service agency from which it could obtain help with urgent needs. RBS, however, looked upon its mission as something more than "do something - anything - now". They saw their mission as planning

a new curriculum for the future.

In the planning process there was no relationship to an overall educational planning procedure, since RBS is independent of any educational structure. Obviously also there was no direct relationship to a political process. The planning process was therefore at another level, i.e. on the planning of the development of products to fit a new curriculum.

As stated above, RBS took over the IPI from LRDC in Pittsburgh. That organisation was more concerned with basic research than development, whereas RBS was more concerned with development-field tests and dissemination of products. It seemed, therefore, that an ideal link could be developed between LRDC and RBS.

There were a number of planning problems such as the installation costs of IPI, teacher in-service training, lack of management skills, further curricular development of IPI, and material production. The most important planning problem, however, was that no one in 1966 could imagine what the size of this total IPI job would be. There was no evident parallel to its development.

The RBS staff looked upon its task as one in which organised research and development would come into operation through a systematic P-R-D-D process. The concept of development was probably less clear than it would seem.

The process used for the development of HLP is illustrated in Figure I (see below). RBS seems to be a pioneer in this process and has probably concentrated more on the creation and development of products than on anything else.

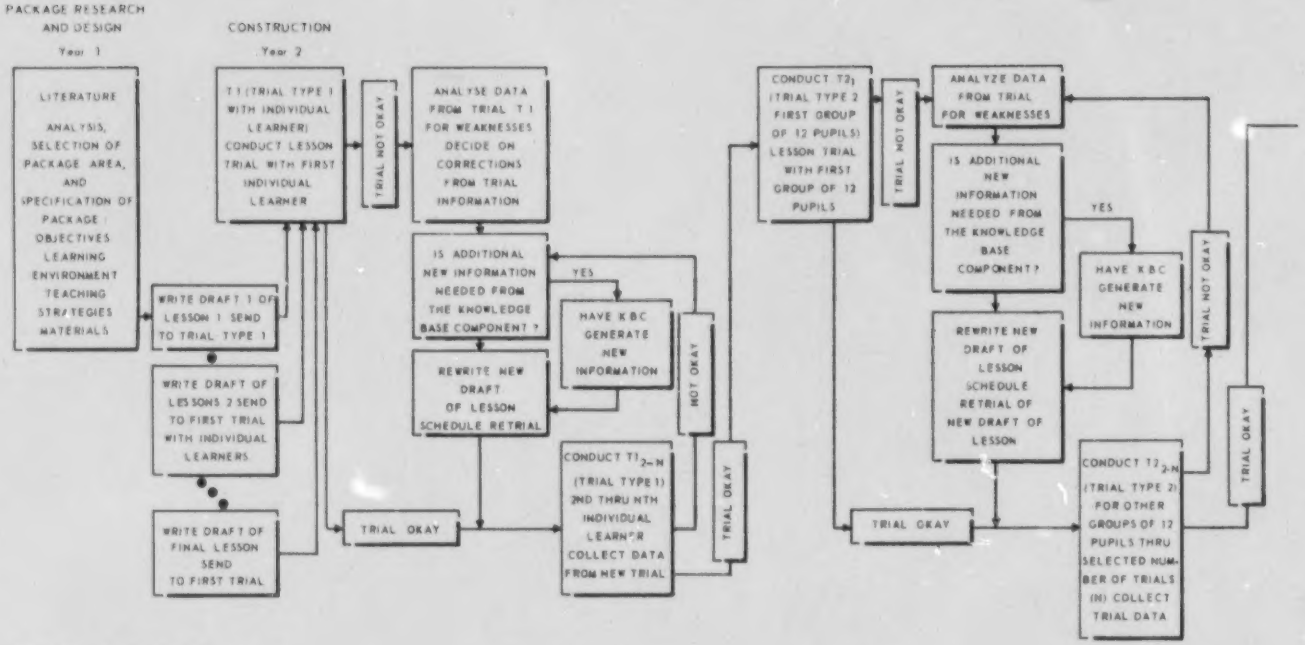
When this has been said it must be stated also that the dissemination, production and implementation process is very well managed through the RBS enterprise. The whole dissemination process is planned from the very beginning. The most important element of the IPI implementation model is that IPI principals were prepared to exercise close leadership and supervision over the programme. The training of principals, therefore, was the key strategy which the RBS staff used. The principals, on the other hand, trained their own teachers not just for a small preparatory period but continuously throughout the school year. The principal learns how planning works in the IPI system and he plans with teachers at least once a week. He hires teacher aides and trains them and he also studies the progress of children and organises materials. He is responsible for managing a system of instruction from beginning to end.

Quite early it was clear that much greater effort and

Figure 1

HLP OPERATING PLAN

RESEARCH FOR BETTER SCHOOLS HUMANIZING LEARNING PROGRAM
CURRICULUM DEVELOPMENT CYCLE


PACKAGE RESEARCH AND DESIGN
Year 1
CONSTRUCTION
Year 2
LITERATURE ANALYSIS, SELECTION OF PACKAGE AREA, AND SPECIFICATION OF PACKAGE: OBJECTIVES LEARNING ENVIRONMENT TEACHING STRATEGIES MATERIALS
T1 (TRIAL TYPE 1 WITH INDIVIDUAL LEARNER) CONDUCT LESSON TRIAL WITH FIRST INDIVIDUAL LEARNER
TRIAL NOT OKAY
ANALYSE DATA FROM TRIAL T1 FOR WEAKNESSES DECIDE ON CORRECTIONS FROM TRIAL INFORMATION
IS ADDITIONAL NEW INFORMATION NEEDED FROM THE KNOWLEDGE BASE COMPONENT ?
YES
HAVE KBC GENERATE NEW INFORMATION
REWRITE NEW DRAFT OF LESSON SCHEDULE RETRIAL
NOT OKAY
WRITE DRAFT 1 OF LESSON 1 SEND TO TRIAL TYPE 1
WRITE DRAFT OF LESSONS 2 SEND TO FIRST TRIAL WITH INDIVIDUAL LEARNERS
WRITE DRAFT OF FINAL LESSON SEND TO FIRST TRIAL
TRIAL OKAY
CONDUCT T1 2-N (TRIAL TYPE 1) 2ND THRU NTH INDIVIDUAL LEARNER COLLECT DATA FROM NEW TRIAL
TRIAL OKAY
CONDUCT T2 1 (TRIAL TYPE 2 FIRST GROUP OF 12 PUPILS) LESSON TRIAL WITH FIRST GROUP OF 12 PUPILS
TRIAL NOT OKAY
ANALYZE DATA FROM TRIAL FOR WEAKNESSES
IS ADDITIONAL NEW INFORMATION NEEDED FROM THE KNOWLEDGE BASE COMPONENT ?
YES
HAVE KBC GENERATE NEW INFORMATION
TRIAL NOT OKAY
REWRITE NEW DRAFT OF LESSON SCHEDULE RETRIAL OF NEW DRAFT OF LESSON
TRIAL OKAY
CONDUCT T2 2-N (TRIAL TYPE 2) FOR OTHER GROUPS OF 12 PUPILS THRU SELECTED NUMBER OF TRIALS (N) COLLECT TRIAL DATA
TRIAL OKAY

Taken from Leon Ovsiew, op. cit.

Figure 1 (Continued)

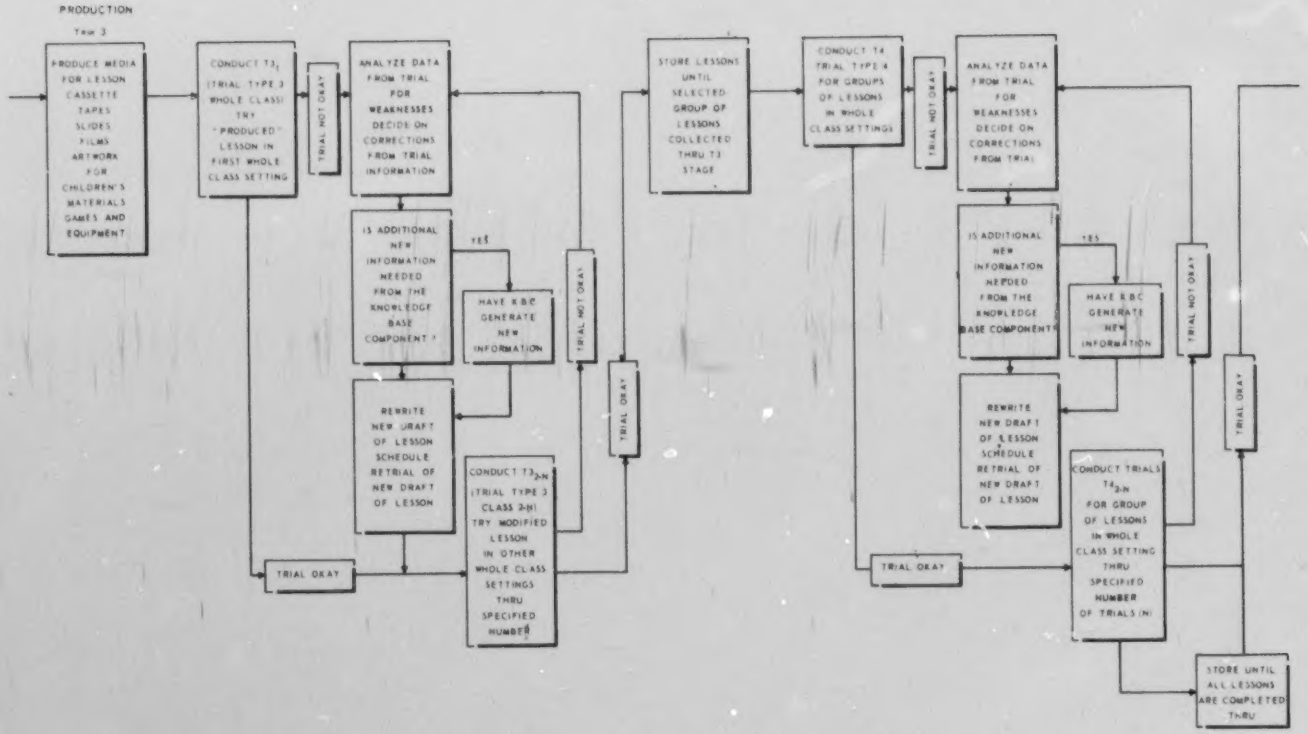
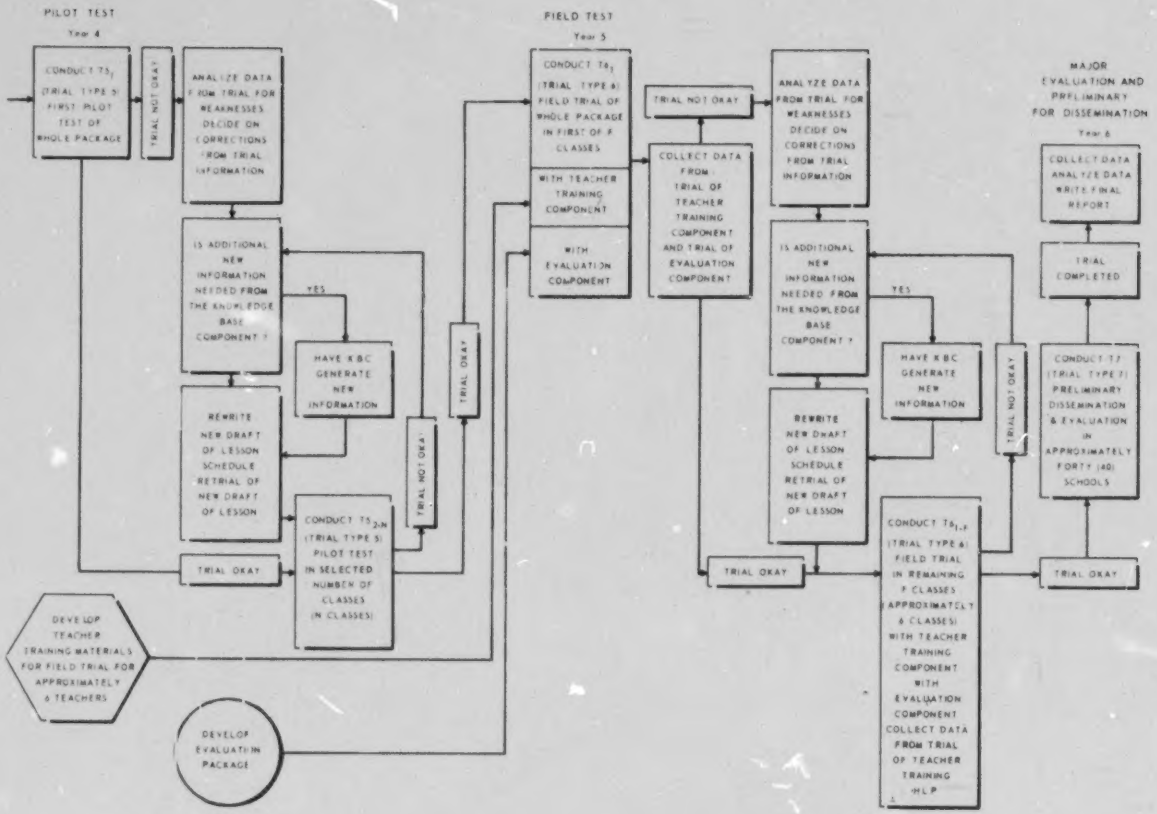

PRODUCTION
Year 3
PRODUCE MEDIA FOR LESSON CASSETTE TAPES SLIDES FILMS ARTWORK FOR CHILDREN'S MATERIALS GAMES AND EQUIPMENT
CONDUCT T3i (TRIAL TYPE 3 WHOLE CLASS) TRY "PRODUCED" LESSON IN FIRST WHOLE CLASS SETTING
TRIAL NOT OKAY
ANALYZE DATA FROM TRIAL FOR WEAKNESSES DECIDE ON CORRECTIONS FROM TRIAL INFORMATION
IS ADDITIONAL NEW INFORMATION NEEDED FROM THE KNOWLEDGE BASE COMPONENT?
YES
HAVE KBC GENERATE NEW INFORMATION
REWRITE NEW DRAFT OF LESSON SCHEDULE RETRIAL OF NEW DRAFT OF LESSON
TRIAL NOT OKAY
TRIAL OKAY
CONDUCT T3i-N (TRIAL TYPE 3 CLASS i-N) TRY MODIFIED LESSON IN OTHER WHOLE CLASS SETTINGS THRU SPECIFIED NUMBER
TRIAL OKAY
STORE LESSONS UNTIL SELECTED GROUP OF LESSONS COLLECTED THRU T3 STAGE
CONDUCT T4 TRIAL TYPE 4 FOR GROUPS OF LESSONS IN WHOLE CLASS SETTINGS
TRIAL NOT OKAY
ANALYZE DATA FROM TRIAL FOR WEAKNESSES DECIDE ON CORRECTIONS FROM TRIAL
IS ADDITIONAL NEW INFORMATION NEEDED FROM THE KNOWLEDGE BASE COMPONENTS
YES
HAVE KBC GENERATE NEW INFORMATION
REWRITE NEW DRAFT OF LESSON SCHEDULE RETRIAL OF NEW DRAFT OF LESSON
TRIAL NOT OKAY
TRIAL OKAY
CONDUCT TRIALS T4i-N FOR GROUP OF LESSONS IN WHOLE CLASS SETTING THRU SPECIFIED NUMBER OF TRIALS (N)
TRIAL OKAY
STORE UNTIL ALL LESSONS ARE COMPLETED THRU

Figure 1 (continued)


PILOT TEST
Year 4
CONDUCT TS_1 (TRIAL TYPE 5) FIRST PILOT TEST OF WHOLE PACKAGE
TRIAL NOT OKAY
ANALYZE DATA FROM TRIAL FOR WEAKNESSES DECIDE ON CORRECTIONS FROM TRIAL INFORMATION
IS ADDITIONAL NEW INFORMATION NEEDED FROM THE KNOWLEDGE BASE COMPONENT ?
YES
HAVE KBC GENERATE NEW INFORMATION
REWRITE NEW DRAFT OF LESSON SCHEDULE RETRIAL OF NEW DRAFT OF LESSON
CONDUCT TS_{2-N} (TRIAL TYPE 5) PILOT TEST IN SELECTED NUMBER OF CLASSES (N CLASSES)
TRIAL NOT OKAY
TRIAL OKAY
TRIAL OKAY
DEVELOP TEACHER TRAINING MATERIALS FOR FIELD TRIAL FOR APPROXIMATELY 6 TEACHERS
DEVELOP EVALUATION PACKAGE
FIELD TEST
Year 5
CONDUCT Ta_1 (TRIAL TYPE 6) FIELD TRIAL OF WHOLE PACKAGE IN FIRST OF F CLASSES
WITH TEACHER TRAINING COMPONENT
WITH EVALUATION COMPONENT
TRIAL NOT OKAY
COLLECT DATA FROM TRIAL OF TEACHER TRAINING COMPONENT AND TRIAL OF EVALUATION COMPONENT
TRIAL OKAY
ANALYZE DATA FROM TRIAL FOR WEAKNESSES DECIDE ON CORRECTIONS FROM TRIAL INFORMATION
IS ADDITIONAL NEW INFORMATION NEEDED FROM THE KNOWLEDGE BASE COMPONENT ?
YES
HAVE KBC GENERATE NEW INFORMATION
REWRITE NEW DRAFT OF LESSON SCHEDULE RETRIAL OF NEW DRAFT OF LESSON
TRIAL NOT OKAY
TRIAL OKAY
CONDUCT Ta_{1-F} (TRIAL TYPE 6) FIELD TRIAL IN REMAINING F CLASSES (APPROXIMATELY 6 CLASSES) WITH TEACHER TRAINING COMPONENT WITH EVALUATION COMPONENT COLLECT DATA FROM TRIAL OF TEACHER TRAINING HLP
MAJOR EVALUATION AND PRELIMINARY FOR DISSEMINATION
Year 6
COLLECT DATA ANALYZE DATA WRITE FINAL REPORT
TRIAL COMPLETED
CONDUCT T7 (TRIAL TYPE 7) PRELIMINARY DISSEMINATION & EVALUATION IN APPROXIMATELY FORTY (40) SCHOOLS
TRIAL OKAY

resources would be needed in the diffusion process. Diffusion is neither automatic, nor as simple as the act of adoption. In addition there is a responsibility to help the adopters to understand and use the product properly.

IPI has now established a strong market in the U.S.A., indeed so strong that it is difficult to control it(60).

The above description gives an indication of a systematic and planned research and development effort which, to a large extent, is following the model we have outlined before. There are, however, some major exceptions to this model, i.e.:

1) The process of RBS, probably because of its lack of formal relationships to the educational system, is not linked to a problem identification process related to the schools themselves.
2) The planning process is not related to an overall planning by the decision makers of the educational system to the future of their systems. The planning of RBS is therefore:
   a) linked to RBS's own indentification of needs;
   b) based on RBS's understanding of how the schools should look in the future.
3) The process is typical for the HLP and the IPI programme, but not so typical for the ACP. It is too early to say what the process will look like when it is as far developed as the IPI.
4) Since RBS is not formally linked to a political decision-making process the effects of its activities can be judged only by the acceptance or rejection of its products whenever they are implemented in classroom situations not supervised by RBS. The lack of formal political and administrative control, therefore, delays the process of "informal evaluation" which other institutions can more easily benefit from. The RBS activities, and the values underlying centrally researched and developed learning systems, can best be assessed in the implementation stage.

THE NEW JERSEY STATE EDUCATION DEPARTMENT'S DIVISION OF RESEARCH, PLANNING AND EVALUATION (RPE)

Between 1960 and 1967 the New Jersey population increased by

more than 15.4 per cent. The growth rate of the State exceeds that of the nation as a whole by almost 50 per cent. This rapid growth has had a significant impact upon the State's school systems which must enrol 40-50,000 additional children annually.

The fact that New Jersey is one of the nation's most urbanised States created major educational problems for New Jersey's larger cities. These cities also have the greatest concentration of the poor. As Usdan(61) says, "the number of unprivileged children in urban areas continues to grow as the poor, by necessity, are compelled to dwell in densely populated areas to obtain needed housing and mass transportation facilities". And just in these areas additional dollars for education are hard to raise. In addition the southern parts of the State are extremely rural, give work to migrant workers from the South, and have a number of specific educational problems.

Despite its relative wealth, the State has for a long time failed to support education adequately. In 1968 New Jersey ranked 49th in State and local expenditures for all levels of education, calculated as a percentage of total personal income.

This combination of rapid growth, urban problems and lack of educational finance has created severe problems in education in New Jersey. In particular, the tradition of "localism" in New Jersey politics has served to break the escalation of State power and has kept State taxes and services at the minimum.

This, very briefly and obvicusly inadequately, is the background for the creation of a division for research, planning and evaluation (RPE), at the State Education Department. RPE was looked upon by the commissioner as an important instrument in the creation, development and dissemination of educational change.

The creation of RPE was directly initiated by the new commissioner who was looked upon as a radical reformer, with his main interest toward improvement of urban education. Although educators in New Jersey, in particular represented through their association (NJEA), looked upon the commissioner with scepticism and even hostility, the creation of RPE was not resented by these groups. Inside the State Education Department, however, some uneasiness was apparent since the new division obviously could be looked upon as a threat to their work.

The objective of RPE has been to serve as the initiator of change. It was seen as an agency that would develop new programmes and, once they were under way, transfer them to operational units elsewhere in the department or through local agencies. A

major motivation behind the RPE was to cut across the rigidly organised educational department and provide co-ordinated approaches to the solution of educational problems, a form of liaison which was badly needed in the New Jersey Education Department.

The RPE was set up with four offices: one for planning, another for programme development, a third for programme evaluation and a fourth for research and development. The department was organised under the responsibility of one assistant Commissioner for Education, who was looked upon by the commissioner as an imaginative and vigorous person, well fitted for a job with the main purpose of questioning educational orthodoxy and creating alternative practices.

The Department had no available funds for the new division. The commissioner and his assistant, however, have been able to get federal and private grants for all their major projects. Increasingly the Department is now able to finance projects through its own budget.

INNOVATIONS AND PROCESSES

In assessing the activities and strategies used by RPE in New Jersey one is faced with the striking contrast between this innovation process and the one going on in the Research for Better Schools.

1) The RBS is, as indicated above, not formally connected with any state or local decision-making process. RPE, on the other hand, is closely linked with political decision-making directly related to the State Commissioner for Education.
2) While RBS chooses not to act according to immediate needs RPE has focused mainly on the present and urgent needs of the State's educational system; in particular, the problems of the urban areas.
3) The RPE strategy for innovation has so far paid little attention to a strict P-R-D-D model. A very different type closely related to a political-administrative strategy, using research only very marginally in the efforts, is reflected in the case study by Usdan(62).
4) RBS uses mainly in-house experts for the development work. RPE, on the other hand, uses practitioners, drawn mainly from school districts and other State departments, in the development work.

5) Also, there are few similarities in the type of products from RBS and RPE.

When one looks upon the type of innovations which are initiated and managed from RPE, one is struck by the wide variety of activities going on.

Category 1 (objectives, functions)

The ultimate goal of all the major innovative programmes in New Jersey is to improve the educational situation of particular groups (e.g. socially disadvantaged groups). A typical example of this activity is the Model Cities Programme (initiated by the Federal Government) which, probably more than any other of the division's activities, reflects the priorities in the New Jersey Educational Department. The project is a comprehensive attempt to "improve the quality of life" in the neighbourhoods of several cities in New Jersey with urgent urban problems. Co-operation has been established with local city administration agencies - an arm of the city government - and with the U.S. Department of Housing and Urban Development (HUD) where most of the funds come from. The activities are based on field and development work closely related to urban educational problems, and a number of experts and field consultants are attached to the project. A wide range of problems, ranging from general problems such as funding, creation of innovation projects and the reform of existing educational practices, is attacked. About $3½ million per year are used in this project and more than 50 different sub-projects are under way (for example, day-care family enrichment centres, summer enrichment programmes, career and college service programmes, community guidance programmes, kindergarten demonstration and tutorial programmes, classroom innovation projects, staff development programmes, mother-child home programmes, etc.).

Category 2 (organisation and administration)

Great emphasis has also been placed on helping local school districts to manage and organise their system better. One such initiative, the New Jersey Urban Schools Development Council (which is now defunct), was a consortium of institutions designed to promote and co-ordinate common approaches to urban educational problems. It was a service-change agency based on five task forces:

1) research
2) programme development

3) evaluation
4) dissemination, and
5) diffusion.

It was supported by federal funds (Title III funds). The programme, which experienced many problems, had a Board of Directors from ten target cities. The Council is said to have often failed to establish appropriate priorities and to have adopted a low-profile role in the State(63).

The Educational Improvement Centre (EIC) seems, on the other hand, to have been a great "success story" - although here also there are different opinions. The EIC is, in many ways, New Jersey's first regional centre. It serves eight southern counties of the State and provides a planning and development service in co-operation with public and private schools in its region. It is funded primarily through Title III funds. The EIC has been in a position to develop new managerial procedures and apply them to day-to-day educational problems. It provides a variety of services and is highly appreciated for its help. Many observers have been surprised by the way in which this centre has been able to introduce innovations into a relatively conservative county of rural, southern New Jersey. The RPE division has launched State-wide training programmes for school principals, introduced new management programmes, and is also in the process of establishing a network of regional "learning institutions in New Jersey".

One of the division's major projects at the moment is the project called Our Schools which involves a broad spectrum of New Jersey citizens in the development of relevant goals for their schools. It is a long-range educational planning project that will include pre-school, elementary, secondary, vocational and adult education. Several State-wide conferences, citizen groups and expert groups are trying to redefine the objectives for education in New Jersey.

All activities which we have referred to have either to do with Category 1 (objectives, functions) or Category 2 (organisation and administration) in our innovation "typology". This does not mean, however, that innovations concerning the roles of educational institutions, as well as curriculum development, are not to be found. They do take place in the framework of a much wider concern, which is mainly to improve education for the disadvantaged groups of all types, as well as to improve citizen participation and integration in the educational process.

If one studies closely the innovation strategies in New Jersey one will find very few similarities to our P-R-D-D model.

The following interpretation might be proposed for the strategy adopted:

1) The strategy is based on political power and accepts conflict as part of the process.
2) The commissioner chooses political strategies to some extent in order to establish priorities. This is clearly true for the allocation of funds to particular projects (with a specific target population).
3) The Planning, Research and Development Division is kept clearly subordinate to the Commissioner's policy and is used as a vehicle for specified educational purposes.
4) Although the leadership has been criticised for "confronting strategy", "unilateral State initiative", "lack of communication", and failure to involve local and regional officials, there is considerable involvement of local groups in the process. The interesting feature, however, is that traditional power groups in education are not the only ones participating in the process. "Non-power" groups (like students) have also been taken into the process.
5) The RPE has been used basically as a "think tank" for political actions. The research function is weak but the creativity in developing innovative programmes is very strong.
6) The innovation strategy is concerned mostly with "people development" rather than "production development". This does not exclude the development of material but it does not give first priority to this aspect.
7) Looked at from a planning point of view the strategy has been weak in the area of diffusion, as there are many parts of New Jersey which have not been touched by the new proposals.

THE SCHOOLS COUNCIL (ENGLAND AND WALES)

One of the major reasons for the establishment of the Schools Council was the growing awareness of the need to reappraise syllabuses and curricula. The feeling was that the rate of change in the schools had not kept pace with the needs of the times, and the Schools Council grew out of the recognition that co-operative machinery was needed to bring together the various agencies

involved in framing the curriculum in schools. The Ministry of Education was in a weak position: there was little positive action or initiative which it could take, for, as Nisbet(64) says, "the firmly established tradition of decentralisation in the English system excluded the Minister from influence in the curriculum and gave control to the local education authorities".

The local authorities did not in fact exercise control over the curriculum, but gave wide freedom to individual head-teachers to decide on syllabuses, timetables, books and equipment. In fact it is only possible to understand the innovative nature of the Schools Council in the English context if one considers the very strong tradition of localism in English education. However, this local power and control was somewhat illusory at the secondary grammar school level since the curriculum was largely determined by examinations set by nine regional examining boards coordinated through the Secondary School Examinations Council. In 1960 a committee of this Council proposed a new pattern of examinations for pupils aged about 16 and the committee offered "teacher control" of the examinations. However, understanding that this would raise complex technical problems, the report also proposed the formation of "a small but highly qualified research and development unit". This unit, called the Curriculum Study Group, was seen by teachers and local authorities as a threat to their autonomy. The Schools Council was subsequently established in 1964 to absorb the Curriculum Study Group, together with the former Examinations Council.

Nisbet(65) also mentioned the influence of individual personalities as an important factor in the creation of the Schools Council. In particular, Derek Morrell, Joint Secretary of the Curriculum Study Group and later of the Schools Council, was a major influence. In one speech he reviewed the problem of the control and up-dating of the curriculum(66):

> "Every teacher must receive or acquire as part of his stock in trade a 'package' of knowledge about the curriculum, and about teaching methods, which becomes the norm from which, if he is a good teacher, he departs in the interests of meeting individual needs..... To my mind, the crucial contemporary question in attempting to discern the reality behind the slogan 'the freedom of the teachers' is, therefore, this: how, and by whom, should the packages be created, and how and by whom should they

be kept up to date ..... It is not self-evident that this is a job that the teachers can claim to be exclusively their own. It involves, amongst other things, defining and interpreting society's terms of reference for the education service, and it can be argued that it should be shared with those whose special forms of skill and experience, or representative status, qualify them to express society's contemporary needs, and to discern trends in social, economic and technical development."

The original constitution of the Schools Council begins thus:

"The objects of the Schools Council for the Curriculum and Examinations are to uphold and interpret the principle that each school should have the fullest possible measure of responsibility for its own work, with its own curriculum and teaching methods based on the needs of its own pupils and evolved by its own staff .....

In order to promote these objects, the Council will keep under review curricula, teaching methods and examinations in primary and secondary schools ....."(67)

As one will see, the responsibility of the school is placed first and the task of reviewing curricula and examinations is subordinate to that primary objective. The guiding principle for the Schools Council work, therefore, is the freedom of choice for the schools and the involvement of teachers in the work.

As one can imagine, with all these conflicting demands and interests, the Schools Council is governed by a complex set of councils and committees. All the major interest groups, teacher associations, local authorities and the Department of Education are represented in the Council. There is a Programme Committee and several steering committees, examination committees and other groups through which the governing Council is working. In these committees, representatives of teachers are in the majority.

INNOVATIONS AND PROCESSES

If one looks at the type of innovations and the strategies for innovation initiated by the Schools Council one will see that both are different from what we have seen in RBS and in New Jersey. The strategies adopted are closely linked with the particular role the Schools Council is playing within the British decentralised educational structure.

The type of innovations in the Schools Council is mostly innovations in Category 4 (Typology, pages 39-41) i.e. curriculum development projects and the planning and management of examinations. In the relatively short history of the Council curriculum development has been mainly in the form of projects based on specific subjects. However, there seems to be a trend towards considering more "the whole curriculum" thus involving interrelated problems like school organisation and, eventually, school structures.

A specific and interesting feature of the Schools Council is the responsibility for approving new syllabuses at advanced levels. In the two years 1967 and 1968, for example, 84 syllabuses were considered and 65 were approved. To some extent one can say that the Schools Council through this work exercises a certain amount of power vis-à-vis the schools, although as one can see only a few new syllabuses have been rejected by the Council.

From the start, the Council's development work for the first three years was as follows:

1) Research and development in the teaching of English.
2) Preparation for the raising of the school-leaving age - a programme designed to help schools.
3) Sixth-form curricula and examinations.

Quite rapidly, however, the Schools Council initiated new projects or facilitated the development of others on a very large scale. The work now, in fact, is best characterised by the wide range of activities than by a certain project or certain priorities.

The English attitude towards educational innovations has its own very interesting elements. In contrast to the American situation, the English attitude is well taken by Maclure(68) when he quotes a senior British educator:

> "I've always thought that to define the aims of education in general terms is more or less meaningless: to do it more precisely is downright dangerous."

Although this statement should not be understood in a literal sense, it does reflect the scepticism toward a too mechanical and technologically oriented attitude to objectives. On the other hand, if one hesitates to specify objectives, how is it then possible to develop and improve curricula? One finds in the work of the Schools Council that the problem-identification-process is done through a number of committees in which the various interest

groups are represented. There also objectives of the different curriculum projects are discussed. Perhaps it is a consequence of this that the Schools Council has at present some 68 projects using $5 million? In contrast the RBS has three projects using $9½ million. The democratic process which is reflected in the planning by committees is a necessity in the Schools Council, a means of giving teachers influence in development work, but it has disadvantages both in terms of planning time and the setting up of priorities. There are two development models related to the Schools Council's projects. In the early days of the Council's work, development tended to be done by a small expert group. But subsequently a different model has come into favour, based upon participation of a wide range of teachers who meet to discuss the present curriculum, its practice and objectives. From these discussions new objectives and a new curriculum emerge; a project committee is formed which co-operates in the implementation of projects and its field phase with a number of teachers and schools. The usual procedure is shown in Fig. 2 (see below).

Evaluation and revision do not have such a significant place in the case of the Schools Council compared with RBS, although a number of projects have an in-built evaluation.

The dissemination of products is done through commercial publishers. This, however, is not the only dissemination process which takes place: for example, field officers paid by the Schools Council are responsible for communication and liaison between the Schools Council and the local authorities. Most important, however, the involvement of teachers in the development work is looked upon as the most important strategy for successful implementation.

One of the major problems in the Schools Council strategy has been its time-consuming procedures in a time when fairly quick responses to change situations are needed. This is probably more a reflection of the constraints in its structure and the highly decentralised decision-making structure than anything else.

The strategy of the Schools Council is based upon an R & D model, but with some modifications.

1) The work of the Schools Council is closely linked with the work of the schools and the school districts, but it cannot "plan for innovation" in these schools since it has no authority in relation to the schools.
2) The "planning" is basically a negotiation process between interest groups, and the priorities are based upon common agreement among those involved.

Figure 2

A CURRICULUM DEVELOPMENT PROJECT: PROCEDURE - SCHOOLS COUNCIL

taken from: John Nisbet, op. cit.

3) Specification of objectives is a process in which teachers participate as well as project staff.
4) The process by which teachers interact in the development process is used as a main element of the total strategy and is looked upon as part of the process of implementation.

DEPARTMENT OF RESEARCH AND SCHOOL DEVELOPMENT OF THE NATIONAL SWEDISH BOARD OF EDUCATION

The National Board of Education (NBE) and in particular its Department for Research and Development, can only be understood as an integrated part of conscious and continuous reforms of Swedish education throughout the last 30 years. During the 1940s the basis of the modern Swedish school was laid down by an impressive series of surveys and reports. Through the work of Royal School Commissions and the initiative of Ministers of Education, the nine-year comprehensive school, new teacher education, and a new upper secondary school were developed. In particular, from 1950, experimental activities and research work began to influence the implementation of the nine-year comprehensive school and in the 1960s planned educational research and development activity began to emerge.

It was the NBE, in conjunction with the local communities, which was given the job of planning and implementing the school reforms. Sweden has always been, in many ways, a centralised country in its educational organisation. A clear link is established between political decision-making and development. From the Parliament and the Ministry the policy is executed through NBE at the State level to the counties and communities.

To understand the Department for Educational Research and Development one must note that central authority in education has a long history and has more or less been taken for granted by the communities. The principle was accepted that policy making had to build upon rational knowledge from experiments and research. A wide range of experimental activities started through the initiative of the NBE in the mid-1950s. When the Board was reorganised in 1964 a new department was created inside the NBE for teacher training and research and development. It was considered of great importance to establish a close contact between R & D on the one hand and teacher training (both pre-service and in-service)

on the other, as a strategy for the implementation of the school reform. The NBE has a longer tradition in research and development work than any of the three institutions so far described. It has four branches which deal with teacher training for pre-school and primary school teachers, special teachers, vocational teachers and supplementary training for teachers, principals and other personnel. In addition, this department is in charge of the educational research and development activity, the development of educational aids and educational evaluation.

These broad responsibilities are looked upon as inter-related activities in a total effort to introduce innovations into the system, not merely to deal with interesting experiments and research projects.

The purpose of the research and development department is stated in paragraph 3 of the Instructions of NBE(69) where it is stated that the Board is charged to:

> "See that the content and methods of education are renewed, developed and improved continuously in step with the progress and development of research within Government and individual administration, industry and the labour market as well as in the other areas of society, at the same time taking note of conditions abroad.
>
> Provide for lucid, co-ordinated planning of the educational system's extent, structure and organisation.
>
> See to it that knowledge of the educational development work is spread rapidly among those authorities and others who are responsible for the activity as well as among those who are otherwise affected by the activity."

Later the question of "accountability" is added as a major reason for more systematic goal-related activities.

The research and development department is an integrated part of the NBE which is governed by a board of laymen representing the labour organisation and other community interest groups. The Board in its overall planning is subordinate to the Ministry of Education. In its administrative work and in its management of R & D activities it works independently of the Ministry.

Among the institutions studied NBE has the clearest statutory power, being delegated the power to implement ministerial and parliamentary decisions in addition to its supervision of the

inspectorate. It is influenced mainly by the political party in power, through the Ministry. Since the same party (the Social Democrats) has been in power over the last 40 years, there has been a continuity of influence on both recruitment and overall policy over an unusually long period.

INNOVATIONS AND PROCESSES

To understand strategies for innovation which are used in the Swedish context it is necessary to study the process of innovation from two different angles:

1) the process of innovation as a political process organised through political parties, Parliament, and the Ministry and executed through the NBE where, among others, research and development play an integrated role;
2) the process of innovation as a specific research and development process and its relationship to the overall innovation process.

The Ministry, on the executive level, has NBE as its central operational body and is by far the most important agency for innovation in Swedish education. The overall strategies which NBE is using for innovation are integrated in a political, administrative and research and development process.

Royal Commissions, with the help of research, and ad hoc staff provided by the Ministry, have the responsibility for proposals concerning objectives, structure, curriculum in terms of subject and timetable and the general development of the educational system. NBE is responsible for the operationalisation of these objectives and their implementation and uses the following strategies in this process (operationalisation and implementation):

a) A rolling curriculum reform which consists of continuous revision of syllabuses, curriculum content, methods and organisation, using a considerable number of educational practitioners and experts as the main resource.
b) Development of teaching aids: this is also directly linked to educational objectives and a systematic collaboration with publishers which has been operating for several years.
c) Development of integrated teaching-learning systems in

social subject areas, mainly at the upper grades of the nine-year comprehensive school. These systems have been a major strategy for innovation during the last ten years, as well as the introduction of individualised instruction, the breaking up of traditional classroom patterns, the introduction of new roles for teachers and students, and new evaluation forms. This has been done mainly through large curriculum development projects.

d) Training and retraining of teachers: a considerable amount of money is invested in revising training courses for teachers; in particular, a total system of retraining is adopted for the entire teaching staff throughout the country. In this work regional centres and consultants from NBE play a central role.

e) The use of research and development as a systematic strategy to improve educational practice: the NBE is not itself involved in research but it plans and commissions research in schools of education and universities.

f) A systematic information process using all available modern communication media.

g) The use of evaluation through a series of follow-up projects and feedback within curriculum development projects, and also through centrally developed standardised tests as a means of revising the system.

As one will understand from this, the NBE is involved in a total educational reform process in which all types of innovation are systematically introduced. We will deal here specifically with projects launched by the Department for Research and Development, and consider how this process is organised and how it relates to the overall NBE structure and strategy.

Research and development is looked upon as a long-range strategy for solving long-range social and educational problems rather than immediate problems. Applied research or experimentation based on development regions (e.g. the Malmö region)(70) is looked upon as an important strategy in solving short-term or medium-term problems.

The research community represented by the Schools of Education and the Universities is engaged in long-range research pro-

jects to a lesser degree (though increasingly) than in development work in the regions.

The central development work at NBE is the continuous work with curriculum guidelines (Läroplan), comprising general educational goals, specific subject goals and recommendations for teachers and students on teaching and learning. In some of the research and development work of the department, the goal is to produce instructional prototypes which can be produced and distributed through publishers, in particular the State Publishing Agency.

The present programmes (1970-1971) cover surveys of trends and needs of education, the school as an institution, school organisation, studies of personnel roles, the aims, methods, teaching aids, the evaluation of the teaching process, and studies into individual development and adjustment. Most of the projects are in Category 4, i.e. curriculum projects (about 70 per cent), but all the categories (which are listed on pages 39-) are represented.

In Category 1, (objectives, functions) in particular, the projects PLANS and INFOS are of interest. PLANS deals with the establishment in the school system as a whole of a structured planning according to goal operationalisation and strategy formulation. The project INFOS aims at developing systems of information and feedback functions, one for school units and one for individuals. Also of interest is a project on the future of education; Education in the Year 2000. Research, however, plays a greater role in this category than the list of projects shows; traditionally the researchers have been engaged in limited projects in Royal Commissions which deal with the future of education, its objectives and functions. In Sweden this is looked upon and organised as a political process.

The development of typical research projects is exemplified by Vormeland(71) with the SAG/Project (independent work in the gymnasium) which is a curriculum development project. Briefly, the development of this project proceeded as follows:

1) The project was initiated by a School Commission (1963) on Secondary Education, which had teachers as well as politicians and administrators as members, at the School of Education in Stockholm, and was backed up by a planning group set up by the NBE Department

for Research and Development. A proposal was ready in 1965, approved by NBE, and the School of Education was given resources one year at a time.

2) The project was planned with the following operational plan:
   a) formulation of the instructional methodology through a measurement analysis;
   b) trials of materials and methodology in classes with running observation and successive modifications;
   c) experimental evaluation through controlled field experiments;
   d) finally, dissemination of methods, materials and research results to the schools.
3) The final report is now being written but 8 minor reports have been issued on the project describing provisional results in the period from 1965.
4) The project has produced a tested prototype of the curriculum and the material has been published by the State Publishing Company.

As can be seen from the above, the Swedish strategy involves a complete integration of a political and administrative process with a research and development process. From a planning point of view this seems to have many advantages, particularly in a centrally organised system. The important problem is how these processes relate to each other, what the actual role of research is, its relationship to regionally inspired developments, the information and communication problems of such a system and the problem of decision-making where some encouragement is given to local and regional initiative. These problems will be discussed later, in Chapters VI and VII.

THE NATIONAL COUNCIL FOR INNOVATION IN EDUCATION (NORWAY) (FORSØKSRADET FOR SKOLEVERKET), (NCIE)

In describing the National Council for Innovation in Education (NCIE), it is necessary at the same time to refer to the general development of Norwegian education in the last 20 years, as well as to the functions of the Ministry of Education and the Parliament. For 17 years the NCIE has been the main agency for the promotion of large-scale educational innovation in Norway. It is closely linked to the central educational administration and to the hierarchy of the decision-making structure.

As Marklund and Bjørklund state(72):

> "This means that a description of the background to the NCIE must be wider than would be necessary in the case of a more or less independent body concerned with educational innovation. The forces that led to the setting up of the NCIE can be traced back to the Joint Programme for the Development of Norway at the end of the Second World War, a programme adopted by representatives of various political parties. The forces that have subsequently affected educational development as a whole have also influenced the NCIE, both its origin and its continued activities."

The Norwegian NCIE is not an independent institute, that is, an institute which enjoys freedom in defining its objectives, strategies and activities. The NCIE is responsible for considerably broader tasks than those of an independent institute. The task given to the NCIE by an Act of Parliament in 1954 extends to almost all types of school in Norway and to the entire country. The NCIE, therefore, has an overall task of renewal of the educational system which brings it close to educational policy in the widest sense(73).

Based on recommendations from a cross-political joint committee, a Co-ordination Committee was established which operated from 1947 to 1952 with the purpose of developing co-ordination between several types of lower and upper secondary school. In a series of reports a specific proposal for the setting-up of a new body - a Council for Innovation - was put forward. The Minister proposed such a body to Parliament in 1954, ensuring that the body be linked to the Ministry, however, with a wide authority to initiate innovations throughout the entire educational system.

The Parliament passed an Innovation Act, which among others, gave the Ministry the power to:

> "His Majesty's consent having been obtained, to disregard, for purposes concerned with experimentation, the regulations embodied in the appropriate school laws, whenever such experimentation may be deemed well founded from the educational point of view and in the interest of the school."(74)

> "In order to assist the Government with advice, initiative and supervision, His Majesty is pleased to appoint a council, the National Council for Innovation in Education, to consist of not more than seven members."(75)

"In order to obtain authority for experimental activity, the National Council for Innovation shall submit to the Ministry of Education plans for experimental instruction or shall pronounce on plans put forward by individual schools and others. This shall also apply to objectives and the qualifications such instruction may confer."

"Questions concerned with grants from public funds for experimental activities within the Ministry of Education shall be brought up before Parliament."

"Reports shall be made to Parliament every year on the subject of experimental activities initiated under this law." (76)

This Act is unique and might be looked upon as an interesting strategy in coping with a traditional educational bureaucracy dependent upon laws and regulations. The importance of this law is that it gives research and development a chance to influence entirely new educational organisations. Another important aspect of this law is its relationship to the decision-making bodies. In one sense it is subordinate to the Ministry's educational policy, but proposals have to be "well founded" and "in the interest of the school". This, of course, is debatable and leaves the Council with some freedom.

In practice the Council has had substantial autonomy, although the Ministry has to approve the budget and formally the appointments. In recent years, a fast-growing budget has resulted in more detailed control from the Ministry. Also in policy questions the Ministry is now using NCIE deliberately as its "implementation" arm of policy recommendations. From a period of autonomy, therefore, the NCIE is finding itself in a situation where its activities are dependent on a direct link with political decision-making, in much the same way as in its first years.

INNOVATIONS AND PROCESSES

In a country where education for centuries has been regulated by law and controlled centrally, as in most other European countries, the particular Act of Innovation was in itself a major strategy for innovation in a rigid central organisation for the purpose of implementing educational reforms decided by Parliament.

The type of innovations which go on through the NCIE can be

classified in three groups:

1) The first group comprises major reform activities such as the introduction and implementation of the nine-year comprehensive school which started in 1954 and which is now accomplished. (Our Category 1: objectives, functions.) Basically, the intention was to put two different schools together under one roof, build a new structure and curriculum and plan the whole country region by region to establish this new educational provision, which is particularly important for the rural areas. The reform was based on proposals from several commissions and political decisions by the Ministry and Parliament. The case study shows clearly how the interaction between political decision-making and the NCIE has developed through these years. The role of NCIE in these reforms is to find answers to specific problems defined by the Parliament or the Ministry.

2) The next type of innovation which characterises the work in NCIE is specific curriculum development projects linked to the above-mentioned reform. Most of them are aimed at individualised instruction and have a more strict planning-research-and-development cycle. They are, as it were, the second phase of an educational reform after the structure, organisation and administration has been established in the first phase. The curriculum development projects fall into our Category 4 (curriculum).

3) A new activity in NCIE is the experimentation with school organisation and administration; in particular the project "Creativity in Schools" has as its objective the investigation of the possibility of giving schools more freedom and initiative. This is, in itself, a major departure from a centralised innovation policy. Other projects, like the establishment of regional development centres, can be looked upon as further elements of the same strategy, giving to the schools and local districts a major role in the innovation process.

The strategies used in this work have already partly been described. As previously stated, the mechanism for innovation, the Act of Innovation, is probably in itself the major strategy for innovation in Norway.

1) This strategy is closely related to political decision-making in both the Ministry and Parliament.
2) The identification of educational needs in Norway, as in Sweden, is done through Royal Commissions which make recommendations to the Ministry and Parliament. The NCIE, through numerous contacts and discussions with different interest groups, tries to operationalise these objectives into feasible school practice. The establishment of priorities through commissions is seldom guided by research. The process within the NCIE, however, is more and more related to research and development projects which clarify the functioning of the system as it exists. Research is often done outside the NCIE on contract.
3) The planning of innovation is done in NCIE, which has considerable authority in this respect. It is based on wide contacts and co-operation with local authorities and teachers. One can observe a change in the role of NCIE since the 1950s. In the early days NCIE to a large extent decided the regulations to be applied for the implementation of a reform. Today the regional planning done by NCIE takes the form of consultancy and advice to the different districts.
4) The model for development in the structural reforms does not follow a strict planning-research-development cycle. It is much more development-oriented, based on close co-operation with local communities where most of the development work is done. Evaluation, in a strict sense, is seldom applied, except of course for standardised tests and examinations of student performance. This does not imply, however, that revisions and new decisions are taken without any form of assessment. Informal and formal discussions are the basis for evaluation in these projects. In the curriculum development projects, however, there is a process which, to a large extent, follows our model: after objectives are carefully outlined and discussed with different interest groups, a proposal is made about a curriculum development project. A project group, often with a project director in the Council (however, increasingly from outside the Council), works out prototype units of curriculum and tries them out in a few schools. An

evaluation and revision cycle is based on this first year of experiments, and a second version of the material is prepared and tried out in about 10 to 50 schools with teachers who have not helped develop the material themselves. Evaluation is done by experts from the Council or a research institute. Based on the evaluation, a revision is made, and, if necessary, a third try-out is organised. The final evaluation includes also recommendations to the Ministry about the implementation of the new curriculum in all schools in Norway. The NCIE is not formally responsible for the dissemination and implementation of the product. This is done in co-operation with the regular central administration which also is responsible for teacher training and retraining.

6) Research in a strict and formal sense does not play the same role as, for example, in the Swedish curriculum projects. The research function, however, is a growing concern in the Council and all major projects are now planned in co-operation either with the research staff in NCIE or with an outside research institute. One of the major problems, however, has been that a decision-making oriented research process is difficult to establish in reforms of a complex nature like the introduction of comprehensive schools.

7) Since the NCIE is not responsible for the dissemination and implementation of any innovations, this leaves the NCIE somehow "irresponsible". However, on the other hand, the NCIE is left with the responsibility for initiative in innovation and development of innovative products while not burdened with the administrative work which characterises the regular system.

THE ONTARIO INSTITUTE FOR STUDIES IN EDUCATION (OISE)

There is one striking similarity between the NCIE and the Ontario Institute for Studies in Education (OISE), namely, that in both cases the institutions were brought into being by a Legislative Act. In the case of OISE the Legislative Assembly of the Province of Ontario decided in 1965 to establish the OISE. According to the Act(77) the objectives of the institution are:

i) To study matters and problems relating to or affecting education, and to disseminate the results of and assist in the implementation of the findings of educational studies.

ii) To establish and conduct courses leading to certificates of standing and graduate degrees in education.

The antecedents of the institute can be traced back some 40 years to the creation of a Department of Educational Research in the Ontario College of Education. This department conducted studies on a wide range of educational problems; demographic studies, research on teacher supply and demand, provincial financing of schools, etc. A second factor contributing to the creation of the institute was the need for a graduate education programme. A third contributing force was the Ontario Curriculum Institute which was created in 1962. This institute co-operated with the Department of Educational Research in curriculum studies and long-term planning activities. Finally, the general social climate was receptive. Increasing public interest in scientific developments, the advent of atomic engergy, the developments and exploration of space and the optimistic view of the role of research gave a boost to the development.

The institute was then brought into being by the amalgamation of two existing bodies, i.e. the Department of Educational Research and the Department of Graduate Studies of the Ontario College of Education. In addition the Ontario Curriculum Institute merged with OISE by the action of two Boards of Governors in 1966.

A unique element of OISE is its responsibility for graduate studies in education. This can partly be traced back to historical events but was also a deliberate strategy from the very beginning, in that graduate studies are combined with applied research and development efforts and field work, an important strategy for the dissemination of new knowledge into the Ontario educational system to guarantee an adequate supply of researchers needed for the R & D work.

The institute is controlled by a Board of Governors composed of the Director of the Institute and others representing professional groups in Ontario (teacher training, universities, teacher associations, and administration, residents of Ontario and instructional staff of the Institute).

This Board represents a departure from the traditional university boards in Ontario in that its members are mostly educators

appointed as representatives of educational institutions and professional associations.

The creation of OISE should be seen against the background of the major changes made in the Ontario education system under the Minister of Education, William G. Davis. He placed control for the school programme and curricula in local districts and gave the major operation of financing support and economic control to the provincial government. Today, more than 50 per cent of school finances are provided from provincial grants, the rest from local sources. In the process of the overall reorganisation, some 1,700 local school boards were consolidated into 150 counties and cities.

The initiative of the Ministry of Education gave much greater authority to the County or the City Board Director. The Department of Education was decentralised and the province was divided into 10 regions, each with a branch office of the Department of Education, with a staff of programme consultants whose task was to assist the counties and the schools in programme development.

In this reorganisation of the educational system of Ontario the Minister obviously created a vacuum. The authority and guidance which had come from the central authority was no longer available and it was left to the local authorities to decide about educational development, and, in particular, about the curriculum. The need for a systematic and substantial effort to bring better curricula to the schools was evident and the assistance of a body like OISE was ideal in this process. The operation of OISE, and the expectations and evaluations of the institute must be viewed in this specific context.

INNOVATIONS AND PROCESSES

OISE is not linked to any formal educational decision-making structure, either politically or administratively. It has, however, a wide responsibility covering the whole field of research and development in education and is also engaged in the training of graduate students in education. It is based on a Provincial Act and was created in close co-operation with the Minister of Education. It obtains its resources from the Province. It has a Board which, to a large extent, can be compared with the Schools Council, and is also, to some extent, managed by committees - many being composed of the faculty of OISE.

The activities of OISE can be grouped under these heads:

1) A programme of graduate studies

The graduate programme is the keystone of the activities of the Institute and other activities are clustered around this particular task. A need was felt for studies of this kind in Ontario in 1965, and OISE has made an impressive impact in this field by increasing the number of graduate degrees from 167 in 1966 to 439 in 1970. This year the full-time enrolment is 382 and part-time enrolment 879. A number of specific courses, designed to meet needs in the Ontario educational community, have been established (i.e. adult education programmes, educational planning, sociology courses with case studies in the schools, educational administration courses based on half-year sabbatical leave, computer application courses, etc.).

2) Research and development activities

There has been a wide range of projects in this field: at one time, up to 300 different projects. This has been so partly because many young academics were appointed to faculty posts with the stipulation that they should devote half their time to research, a situation which encouraged the undertaking of individual research projects. There has been much criticism inside and outside the institute in relation to the number of projects, and the staff has now agreed on major concentration in some few priority areas, with new budgetary procedures, and a reduction of support for research and development. Several large programmes are now emerging. The "major thrusts" in the Institute are now as follows:

a) an elementary school-thinking programme where the aim is development of instructional materials in the area of thinking for students from pre-school level through grade 8;

b) studies in educational policy planning and performance with the aim of helping school districts to plan for the future and become more accountable for their performance;

c) a programme of Canadian studies with the goal of collecting materials about Canada and bringing these materials to the attention of curriculum developers;

d) a programme on innovations and alternatives in education with the objective of providing assistance to the provincial educational system in the innovation process.

Among the larger programmes which are designated as interdepartmental are a moral education project with the objective of establishing a theory of moral development; a Canadian public issues project for the development, evaluation and dissemination of a social studies programme; and a bilingual education project aimed to help the various Boards of Education to initiate experiments in bilingual education for English-speaking pupils at the kindergarten and grade 1 level. As one will see most of these projects fall into Category 4 (curriculum) except for the studies in educational policy planning and performance and the programme on the innovations and alternatives for education, which fall into Category 2 (organisation).

3) Special school-related services

A specific programme in OISE is the field development, which, according to the co-ordinator, is essentially "a project or linking activity, a co-ordination of effect between people and OISE staff"(78). Most of these linking activities are carried out through the regional centres. The centres have different tasks which vary from transfer of leadership to people within the community, and the analysis of needs and objectives, to providing expertise and dissemination of OISE products in the schools. The Office of Field Development in OISE in co-operation with the regional centres has carried out several large-scale projects requested by province-wide organisations. The Office is mainly responsible for field relations, dissemination and assistance in implementing research and innovative ideas.

As an overall strategy for innovation OISE has accepted three functions:

a) graduate training;
b) research and development;
c) consultancy to schools and school districts.

Up to now, however, this has been only to a small extent planned and co-ordinated to include all the schools in Ontario, probably for the following reasons:

1) OISE is not linked to the formal education decision-making process.

2) Inside OISE itself, the work is done mainly in departments with little co-ordination. In the last few years, however, new emphasis has been given to interdepartmental work and this has resulted in larger R & D efforts more relevant to the needs of the Ontario system.

3) The effort to co-ordinate activities and to establish links with the system, has brought the institute from a university-type of research model to an organised planning-research-development-and-diffusion model. In their research and development activities, this is now the main strategy for innovation.

4) The needs for innovation are defined by co-ordinating programme committees. No separate educational planning division has been established in the Institute to work out cycles of need assessment, specification of objectives and analysis of alternative strategies.

5) The development model which is now foreseen in the major projects follows to a large extent the model outlined on pages 54 and 55. The criteria for establishing the major projects have been practicability and generalisable impact on the educational system. In addition, the project must have sound design, adequate organisation and management, clearly stated objectives, adequate evaluation, and careful planning for dissemination and implementation.

6) The specific strategy of using regional centres for dissemination is the major way in which OISE obtains access to the school systems. Planning of this operation is done in close co-operation with local school authorities. This is the most important dialogue between schools and OISE, and also influences priorities in the OISE programme.

7) The dissemination of OISE work has been mainly dissemination of knowledge, rather than dissemination of "ready-to-use" products in the schools. This takes the form of publications on curriculum and administration and journals covering a number of educational topics. In addition, a wide range of conferences has been arranged throughout Ontario. Obviously, through its

graduate programme, OISE has an efficient dissemination channel.

8) How far the work of OISE is implemented, and the relationship between OISE and the regional departments of education, are topics which are discussed in Chapter VIII.

THE BAVARIAN STATE INSTITUTE FOR EDUCATIONAL RESEARCH AND PLANNING (BRP)

The Bavarian State Institute for Educational Research and Planning (BRP) was created in 1967. The support for such an institute came from different sources. Weinert and Simons(79) describe the "two decades of non-reform in West German education" (1945-1965) as the major motivation behind the establishment of planning institutes like the BRP. A growing public concern about the "educational crisis" in Germany was apparent during the 1960s and created a pressure for educational reforms. This created a readiness to base education policy decisions on scientific research and to develop necessary mechanisms for educational planning, development and research.

The relationship between Federal and State initiative in education was another factor. In 1966 the "Deutsche Bildungsrat" (German Education Council) was created with the purpose of standardising and reforming the German school system(80). From that time the need for State initiative backed by scientific evidence was more important than before in support of regional ideas. Traditionally the States in Germany have had more or less unlimited freedom in educational affairs, and most States have feared a growing Federal initiative.

Bavaria is an example of a thinly populated State in Central Europe and has moved from a typical agricultural to a more industrialised social structure at a very rapid rate. Early in this century 70 per cent of the Bavarian population was involved in a single clearly-defined occupation in which little educational training was necessary (agriculture). Today, almost the whole population is facing a variety of occupational choices, involving professional and social mobility and increasing demands for educational preparation.

These developments in Bavaria have occurred on a rather rapid scale, and as a result, regional differences have been growing.

The need for more equality of life-chances in economic and social terms has therefore become a major political objective in Bavaria. The BRP was created with the main objective of planning for equality of educational opportunities throughout Bavaria.

In his budget proposal in 1966 the Minister of Education and Culture said(81):

> "They need a special body to observe, plan, test and propose, to cultivate links with theory and school practice as well as with social and political forces, to keep in touch with all the complex facets of the educational policy debate and make our State's contribution to the new educational planning at Federal level."

The Institute has been set up to provide a scientific basis for education policy decisions. This general objective, at which all activities are aimed, is accepted by the Ministry and the Institute. A major assumption has been that the planning and research work should be based on regional planning, taking educational, economic and social differences into account in improving the educational system at the different levels and areas in Bavaria. The criteria for the research work are its practicability and its relevance to educational policy problems in Bavaria.

The Institute is organised as a planning and research institute related to the Department of Educational Planning in the Ministry of Education and Culture. The staff of the Institute is formally subject to ministerial supervision but in practice such supervision does not exist. Important decision-making powers are vested in the Director of the Institute, who is at the same time engaged in several committees and work in the Department for Educational Planning in the Ministry. There seems to be complete agreement between the Institute and the Planning Department about the objectives for BRP.

INNOVATIONS AND PROCESSES

Weinert and Simons(82) say about the activities of the Institute:

> "The educational research conducted by the Institute has been designed specifically to foster area-related educational planning which is not concerned, e.g. with a detailed definition of teaching methods. On the contrary

the aim is to make a systematic study of specific factors in the educational system, such as supply of and demand for persons holding various educational qualifications, investment on teaching aids, buildings, equipment, employment of staff, expenditure on overheads, etc., which can all be quantified. In the opinion of the Institute's director, the main function of educational planning in Bavaria and therefore the principal aim of the Institute itself, is to determine the 'silent demand' for education and initiate measures to meet it."

A number of projects have been commissioned in 1967, for example, to investigate the effects of the creation of new schools in given districts, the effect of local educational opportunities on the choice of residence, analysis of the structural reform of primary schools, analysis of barriers to change in the secondary school sector and comparison between schools following old and new structures. The Institute has also been engaged in "model school projects" to analyse practical experience with experimental schools, research projects to prepare for the introduction of comprehensive schools in Bavaria, and a project on the "study of the conditions for improving school facilities in a federal development area". The aim of these projects is to analyse as accurately as possible the factors which are important for the school system in a given region in order to define criteria for planning, siting, structures and development. Once these criteria have been developed an attempt will be made to simulate planning through a computer programme.

There are a number of other smaller projects which deal mainly with planning, methodology and applied research to establish facts about the present school situation in preparation for new educational structures. This includes not only an analysis of the educational situation for children but also a complete survey of the adult education system. Since the Institute has been particularly interested in differences in local areas in the State, the project called "Educational Movement and Regional Structures" is one of the most typical projects of the Institute. The project shows a considerable disparity in education between the urban and rural districts. The Institute feels that the conclusions of the study show that the State cannot be treated as a fully homogeneous area and that identical measures will have different results in different areas. It also shows that the lack of participation in education can only be explained in terms of a

complex set of factors. As a result of this project, there have been several policy recommendations to the Ministry.

The activities of BRP differ quite considerably from the activities in the other six institutions studied in this volume. This may be explained by the stage of development of education in Bavaria, or it may be interpreted as a different approach to educational development. The projects are basically research projects and no one is a typical development project. The approach is highly structured from a scientific point of view, and uses scientifically trained people in its projects. The projects fall into our Category 1 (objectives and functions) but they are mainly preparatory studies for innovations in this field. The Institute in fact looks upon itself as mainly a planning and research institute to prepare for policy decisions rather than an institute initiating and facilitating changes itself.

Although the objectives of the Institute differ considerably from the other institutions studied it is of interest in this study because it shows how, in the German situation, a growing need for educational change is being approached through the use of planning and research designs. Knowing the German tradition of highly sophisticated research, a research institute directly connected with educational decision-making will be in a position to have an important influence on educational development in the State.

So far the Institute has concentrated on research work which results in recommendations to the Ministry. The processes involved in this have mainly been traditional research work with clearly defined objectives and output and with relatively few people involved in each single project. It is not possible, therefore, to identify any process of innovation in the Institute's activities, since the process involved is really a process of research and planning in relation to educational policy.

In this work, however, the Institute has established certain important strategies. The most important factor is the close liaison between the Ministry of Education and Culture, the political leaders in Bavaria and the research institute (see Chapters VII and VIII). Co-operation with the teachers and the research establishment has been a secondary factor for the Institute.

The Institute also tries to inform interested members of the public of its own activities. However, being a State-funded body, it has certain rules to follow, for example in its relationship with the public. Consequently, it has itself not embarked upon

major changes in such relationships lest it should seem to be breaking its trust with the Ministry of Education and Culture.

In its research activities the Institute has chosen an area-based approach to its planning and research work. The Institute "rejects from the outset the tendency of educational research and planning to suggest that the specific educational school system is the only logical and feasible one without reference to regional characteristics"(83).

A COMPARATIVE ANALYSIS OF CENTRAL INSTITUTIONS

This analysis is an attempt to study common characteristics of the institutions described above, define their major differences, and possibly analyse their importance as reflected in the work of the institutions.

A number of specific characteristics have been described for each institution separately by the individual researcher. Many of these cannot be dealt with here, and the reader is referred to the different case studies which give a more detailed description*). An analysis in more detail of decision making and participation, of personnel policies, of roles and functions in educational innovation and of unintended effects will be found in Chapters VI-IX.

The present analysis will concentrate on the following:

I. Institutional characteristics

A. Objectives. What overall functions does the institution perform?

a) Formulation of policy (a normative change)
b) Adoption and development of policy
c) Implementation of policy.

B. The age of the institutions, and their foundation: Who supported or opposed the foundation?

a) Professional groups
b) Politicians
c) Lay groups.

C. The statutory base and the decision-making structure: What type of power does the institution have?

a) Academic
b) Financial
c) Control of certain activities (e.g. teacher training).

*) See Annex II.

II. Type of innovations

What does the institution see as its main area of interest in the field of education? We shall use our four categories of innovation:

1) Objectives and functions
2) Organisation and administration
3) Roles and role relationships
4) Curriculum.

III. The process of innovation

How is the process observed related to the P-R-D-D model? Can the underlying assumptions of this model be tested?

IV. Strategies for educational innovation

A. Having the above factors in mind, in which of the three broad categories in our "strategy model" do the institutions belong?

a) Empirical-rational strategies
b) Normative-re-educative strategies
c) Political-administrative strategies.

What are the main sub-strategies used? (See discussion Chapter II, pages 48-51.)

B. How is type of innovations related to type of strategies? Is it possible to find certain trends across cultures in the selection of strategies for specific types of innovation?

I. INSTITUTIONAL CHARACTERISTICS

Relatively few characteristics are common to all institutions studied, apart from obvious but significant points such as the following: all institutions represent a departure from traditional strategies for educational change. They represent a necessary link between the formulation of a normative change at the policy level and the implementation of this policy. The implementation of policy has traditionally been met by laws, regulations and administrative control. The new institutions also represent a new instrument to serve as a basis for policy-formulation, but they have a more important function as a research and development link between policy and practice.

All the institutions cover more than one specific sector of

the system and more than one region of a country; most institutions are set up to serve the whole State or the country. Their concern with the educational system as a whole is another departure from traditional, vertically-divided educational administration and provides an opportunity for a wider view of educational needs in the entire system.

Objectives and mission

There are distinct differences in the ways the institutions understand their mission and define innovation:

a) some institutions look upon innovation as a means of serving political objectives - often long-term political objectives (NBE, NCIE and BRP, typically all three of them linked to central agencies in education) though also short-term political objectives (RPE);

b) others look upon innovation as a response to crises in the present system and as a better administrative mechanism to solve day-to-day problems (partly RPE, Schools Council);

c) some institutions look upon innovation as a systematic research and development process to improve educational practice and give "better answers" to teaching-learning problems, often with long-range objectives (RBS, NBE's Department of Research and Development, OISE).

The institutions also differ in their comprehensiveness of mission, both in principle and practice:

a) some institutions look upon themselves as a mechanism to prepare policy decisions, others as initiators of educational innovation, others as the actual agency which develops innovations, and others as the agency responsible for the whole process, including implementation.

The Bavarian institute is mainly engaged in the formulation of policy: this role of researcher-professor is in line with the German tradition. NBE's Division of Research and Development is limited mainly to initiating educational innovations in accordance with general policies given by the Ministry. (NBE itself has a more comprehensive mission.) All the others are agencies which actually develop educational innovations, and (except NCIE) are also responsible for the implementation of educational innovations.

All the institutions studied are relatively young institutions except for NCIE, which has been in existence for 18 years, and the R & D activities of the NBE which in various forms have been in existence for about 20 years. RBS and the Schools Council have been in existence for 8 years, OISE for 7 years, RPE and the Bavarian Institute for 5 years.

All the institutions were created with the support of political forces, either at the federal (USA), national or State level. In the case of the Schools Council, NBE, NCIE and OISE, professional groups (mainly teacher organisations) strongly supported the foundation of the institution. In few cases was there any strong opposition reported to the setting up of the institutions, except perhaps for the fear in the United Kingdom felt by local authorities about a shift in power over the curriculum from local to "central" agencies. It is likely that different expectations and opinions were held about what the institutions were supposed to do (as reported in the case of RBS and BRP), but we have not been able to analyse these differences in a systematic way.

The statutory base and the decision-making structure differ also. All institutions have academic power in the sense that they have access to information and knowledge which is not commonly available, and a capacity to develop new programmes. This power, however, is relative, since it depends on the degree of access which other parts of the system have to the same resources. Comparing the quality of work of different institutions studied, therefore, is not likely to have any real meaning since their influence (in academic terms) in their own country depends on the "quality of the system" (how "advanced" the institution is compared with other parts of the system).
Some of the institutions do have legal power through control of budgets or the financing of innovative projects. This is true for NBE, NCIE and RPE in particular. Financing in these cases is used as a policy instrument. Some institutions also exercise power directly or indirectly through their control of certain activities important in the management of the educational system. The

NCIE for a time had control, in practice if not legally, of the whole implementation of the Norwegian comprehensive school policy. NBE has control over teacher training, and in fact through its financing of research projects in the Schools of Education to a large extent determines their policy and controls their activities. The BRP does at least influence directly the development of education in Bavaria through its role as a planning mechanism for the Ministry.

There are differences also in relationship to the formal education system:

a) The institutions differ considerably in their relationship to the central decision-making structure of the educational system. NCIE, NBE and RPE have direct links with the education departments or Ministries of Education. The Schools Council is only very indirectly connected to the educational decision-making structure - it has no direct connection in curriculum and development work, but has a formal co-ordinating function in the area of examinations. The RBS and OISE have no formal relationship to the central educational decision-making structure.

b) The institutions differ considerably in their authority over schools. NBE has full authority within legally defined areas over all schools; NCIE has the same authority in schools with innovative programmes. The RPE has only partial authority, and RBS, the Schools Council in its curriculum work, and OISE have no authority over schools.

II. CATEGORIES OF INNOVATION

We have discussed the institutions in relation to our four categories of innovations. The table below shows some of the differences between the institutions.

As can be seen, all institutions except for BRP are engaged in the improvement of the teaching-learning process (Category 4). These activities, however, differ considerably. Most often curriculum development is a relatively short-term activity reflecting present curriculum needs. In some cases, however, and this applies particularly to RBS and some of the curriculum projects

in NBE (R & D), the activities are long-term activities set up to "design" new classroom practices for the future ("future" being defined as a 10-15 years' span from the start of development to full implementation). Most curriculum projects go beyond a mere revision of the content of the syllabus. In nearly all cases the projects are set up to improve the quality of instruction in respect of its content, methods, organisation and evaluation. As we have observed, however, only in a few cases (IPI in RBS, and IMU in NBE and NCIE) have these projects taken the form of "teaching-learning-systems" using self-instructional methods as the main component.

Institution	Category 1 (Objectives and functions)	Category 2 (Organisation and administration	Category 3 (Roles and role relationships)	Category 4 (Curriculum)
RBS (U.S.)	-	Some activities	-	Main area
RPE (New Jersey)	Main area	Some activities	-	Some activities
Schools Council (UK)	-	Some activities	-	Main area
NBE(R & D) (Sweden)	Some activities	Some activities	Some activities	Main area
NBE(total)	All categories			
NCIE (Norway)	One main area	Some activities	Some activities	One main area
OISE (Ontario)	-	Some activities	Some activities	Main area
BRP (Bavaria)	One main area	One main area	-	-

There are very few innovations, if any, in Category 3 (role-relationships). Some of the curriculum projects obviously have as one element a change in the teacher-student relationship. Indirectly these projects also change the role-relationship between "central" and local control of the curriculum. Possible exceptions to this conclusion are the Organisational Development activities of OISE, some projects in NBE and the "Creativity in Schools" project of NCIE - but the latter is mainly an innovation

in the organisation of the school system. These activities, characterised by different organisational development approaches, are in fact innovations in both Category 2 and Category 3. By definition there are no real organisational innovations without innovations in role-relationships.

All institutions studied have some activities going on in Category 2 (organisation and administration). These projects fall into three groups:

1) organisation development projects (e.g. "Creativity in Schools", NCIE);
2) projects designed to improve the technical capacities for planning and management (e.g. "Administering for Change", RBS, and several projects at BRP);
3) creation of regional or local development centres (New Jersey, Norway, Sweden, Ontario, U.K.).

Projects of a more comprehensive nature to change educational objectives and the functions of educational institutions (Category 1) are taken up by RPE, NBE, NCIE and BRP. In the Scandinavian and German context these "projects" involve major reform of the secondary school systems towards comprehensive schools. The role of the institutions differs. The NCIE and NBE play similar roles: educational commissions draw up major lines of development, and parliaments and the ministries delegate the authority to develop (and, in the case of NBE, to implement) the innovations. In the case of BRP this body serves mainly as a resource-unit for the Ministry in its planning efforts. In New Jersey the RPE has mainly engaged itself in the renewal of urban education. In all cases studied the objectives have included equality of educational opportunity, a redistribution of funds and priorities for the benefit of the disadvantaged, especially those described as socially disadvantaged.

III. THE PROCESS OF INNOVATION

We have tried to analyse to what extent the institutions follow the P-R-D-D model which we outlined on pages 54 and 55. We have found that curriculum development projects are to a large extent covered by this model. It is hardly applicable elsewhere. We have found also that the extent to which such a process is utilised varies more between projects than between institutions. However, the table below gives a summary presentation of the

extent to which the various institutions are using this model. We have tried to illustrate the extent to which the model reflects the actual process, and moreover what functions different phases of the model play in the process. (For example, "experimentation" can be a "test" for prototype developments or the actual development phase itself.)

Throughout this volume we shall see how far the assumptions underlying the P-R-D-D model in education are in fact operating in the process of innovation. We have assumed (see Chapter II, page 55) that, to the extent that the process can be explained according to the model, the underlying assumptions are also valid. However, in those cases where the process clearly differs from the model, the assumptions are not valid, and other factors relevant in the educational context must be considered in explaining the variations and differences.

Is the process as observed in the central institutions a rational and planned process? If the term "rational" implies a process based on research and knowledge gathered by empirical methods, one must conclude that this is very seldom the only basis for the process. This may best be illustrated by the problem identification phase. This phase is seldom based on systematic data-collection about needs and priorities in development. Usually problem identification is an ad hoc exercise, seldom based either on careful examination of present needs, or on long-term educational or integrated social planning.

When priorities somehow are established, however, the project management in most institutions - in particular the development phase - is a rational and planned process. In general terms it is also a sequential process, following the steps in our P-R-D-D model.

We believe that this distinction between the planning, development and implementation of the innovation process on the one hand, and the monitoring of individual projects, is an important distinction. While the institutions studied do seem to manage projects fairly well, one cannot automatically assume that they are successful innovative agencies.

Our conclusion is that the establishment of priorities and the dissemination/implementation phase of the process are the weakest parts of the work of the institutions studied, especially in institutions not closely linked to the political or administrative system. Why are these aspects of the process not systematically developed? It appears, after careful analysis of the case

THE USE OF THE PLANNING-RESEARCH-DEVELOPMENT-DIFFUSION Model

P-R-D-D Model / Institutions	1 Problem identification and definition	2 Innovation planning	3 Innovation programming and development	4 Experimentation	5 Evaluation and revision	6 Dissemination and production	7 Implementation
RBS	Process not related to political process and educational system	Very careful project planning	Systematic construction and development cycles	Experimentation in schools as test of prototype material	Use of formal evaluation techniques	Dissemination through material production	Implementation through personnel training
New Jersey	Connected with political decision-making	Not according to model	Varies according to projects	Extensive field experiments used as major development phase	Based on informal evaluation procedures	Not far developed	Not far developed
Schools Council	Slow process dependent on committee work not related to school system or political process	Careful project planning	Varies from project to project	Extensive school experimentation used as major development phase	Partly by formal evaluation	Considerable publishing and use of media	Not task for Schools Council
NBE	Systematic process related to central political decision-making	Careful project planning	Systematic development cycles	Extensive school experimentation, mainly as test of prototype material	Use of formal evaluation methods	Through material production, use of media, and curriculum guidelines	Teacher training and in-service training. Follow-up projects
NCIE	Related to political decision-making and educational system	Careful project planning	Varies from project to project. Systematic construction and development cycles in major projects	Extensive school experimentation partly as part of development phase	Partly formal evaluation methods	Production of material	Not task for NCIE except for follow-up projects in teacher pre-service training
OISE	Not related to political decision-making or formal education systems	By international committee solid research base	Differs from project to project	Some school experimentation	Partly formal evaluation methods	Dissemination of reports and textbooks	Assistance in implementation through regional centres and otherwise
BRF	Close relationship to political decision-making	Model not applicable					

studies, that the "identification of needs" is not simply a rational process but first and foremost a political process - a matter of values and differences between interest groups. The expression of "needs" and the establishment of priorities is basically a question of what individuals and groups want to achieve. In very few cases, if any, is it possible to achieve consensus about objectives. Two institutional patterns, therefore, seem to have evolved: one solution, represented by RBS and (partly) OISE, where the decision making is mainly an internal activity. RBS went through an extersive planning period to establish the programme. Although various individuals participated, the creation of the programme was the responsibility of the staff. The major changes in the OISE programme have also been an internal responsibility. In both cases a thorough discussion of objectives and priorities has been the responsibility of the professionals.

The second solution is represented by institutions where decisions on objectives and priorities are made by political bodies, and this is separated from decisions on internal projects which are delegated to the institutions.

This probably represents the first illustration in this volume where clearly the P-R-D-D model is inadequate to some extent. Since objectives in education are manifold and often conflicting, this part of the process (problem identification) is not a "value-free" process, but a process implying conflicts.

We also find that the dissemination and implementation process is not as far developed as the development process. Certain obvious reasons may be suggested: for example, some of the institutions are not old enough to have adequate experience; and in some cases this part of the process is not legally part of the responsibilities of the institution.

There may, however, be more fundamental reasons. In some cases we have seen that implementation of innovations has been done successfully through regional centres (e.g. New Jersey, Ontario). Can this part of the process in fact be better managed locally - implying that other processes such as social interaction, communication and individual involvement are necessary for successful implementation? The answer to this question must wait until we have analysed these processes in the regions and the schools.

IV. STRATEGIES FOR INNOVATION

As we have already seen, the innovation process can only partly be explained as a rational and planned process according to the P-R-D-D model. This model is mainly applicable to the individual projects, particularly in their development stages.

In our discussion of alternative strategies for innovation we suggested three categories:

1) empirical-rational
2) normative-re-educative
3) political-administrative*).

We assume that most institutions use elements of all these strategies in their work. In this analysis we shall pay special attention to the question of how far the statutory base and decision-making power influence the use of strategies. To illustrate the use of strategies we shall analyse each institution separately.

RBS: All projects follow basically empirical-rational strategies, most commonly the P-R-D-D approach

RPE: All types of strategies are used in combination. The basis for most projects is the statutory power of the Commissioner. Examples of political-administrative strategies used to change educational practice are to be found in the redistribution of resources, manipulation of power, for example, extending the power of students and laymen. Also empirical-rational strategies are used, for example, in personnel selection and replacment, and through research and development efforts as described above.

Schools Council:

A typical feature of the Schools Council is the negotiation process in its governing council and numerous committees. We have listed this strategy as a "non-violent" power-coercive strategy. In reality, different interest groups, such as the local authorities and teachers, have to define common ground before projects can start. However, emphasis is placed on improving the problem-solving capabilities of the local systems themselves, using normative-re-educative strategies. These operate in combination with the research and development process described above.

*) See discussion, Chapter II, pages 35-51.

NBE: Through its statutory base and its connection with central political and administrative bodies, the NBE traditionally has used legislation and regulations to implement desired innovations. Political power delegated by the Ministry is still an important basis for its overall planning. Increasingly, however, the institution is using empirical-rational strategies in a variety of ways, including training programmes and sometimes personnel selection and replacement. The research and development process has already been described. Also consultants and other experts are employed to assist local school systems, and in particular a systematic retraining scheme and information campaign is used to implement large-scale educational reforms. Normative-re-educative strategies are seldom used.

NCIE:

Much the same situation as NBE is true of NCIE. Political and administrative strategies have been used, particularly in the first ten years, but still as part of the overall strategy. Empirical-rational strategies have increasingly been used as described above. In the last five years a vigorous attempt to improve the problem-solving capabilities of the local school systems has increased the Council's use of normative-re-educative strategies.

OISE:

The strategies used are basically empirical-rational. Basic research and systematic training of graduates are also used in this context. To some extent the institute is engaged in normative-re-educative strategies, using its own capacity in upgrading the problem-solving capabilities of local school systems.

BRP: The strategies are empirical-rational, with research and planning as main strategies. The institute uses the "political umbrella" of the Ministry, however, as a basis for all its work. Its research and planning work is therefore used deliberately to increase the capabilities of central political and administrative institutions.

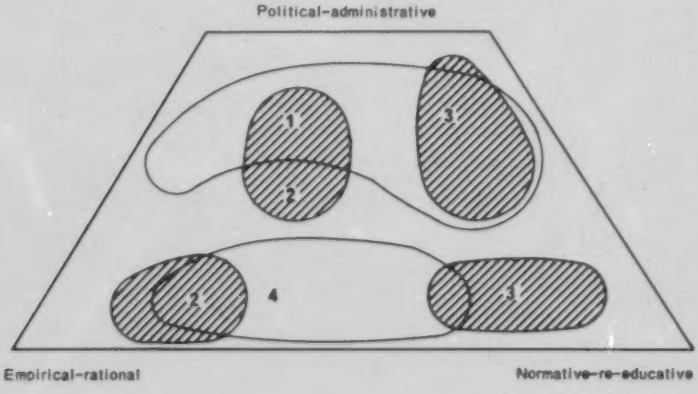
The conclusion seems to be that in nearly all institutions (except for RBS) empirical-rational strategies are not used in

isolation. Often political-administrative strategies provide a basis for empirical-rational approaches, and in some cases the latter are used to strengthen the basis for political-administrative strategies. This applies particularly to those institutions which are most clearly connected by law with central educational decision-making, and applies less to the more independent institutions. In many ways normative-re-educative strategies are the most radical departure from present practice in these institutions, since, in fact, they imply a redistribution of power and influence from the institutions themselves to the schools and local authorities. In few cases has such a change been initiated by the institutions themselves.

V. THE RELATION OF TYPES OF STRATEGY AND CATEGORIES OF INNOVATION

We have already discussed the relevance of the P-R-D-D model to different innovations effected by the central institutions studied. We have found that it is usually the curriculum projects (Category 4) which are planned, developed and implemented according to this model, and even in this category only a few of the projects studied follow the pattern strictly. The analysis of the strategies used in the other innovations described suggests the pattern described in Figure 3:1.

Figure 3 : I
CATEGORIES OF INNOVATION BY TYPE OF STRATEGY



In the Figure 3:1 above we have tried to place the categories of innovation from 1 to 4 in a "strategy diagram".

Category 1 (objectives, functions) is, to a large extent, developed and implemented through political-administrative strategies, though some empirical-rational or normative-re-educative "sub"-strategies also are to be found.

Category 2 (organisation and administration) involves either political-administrative strategies, in which new organisational arrangements are brought in to replace old ones, or empirical-rational approaches, as in the ACP project of RBS.

Category 3 (roles and role relationships) involves either traditional administrative approaches (political-administrative) or an attempt to improve the problem-solving capabilities of the system (i.e. normative-re-educative), as in organisational development approaches.

Category 4 (curriculum) is generally carried out through empirical-rational and normative-re-educative approaches, or a combination of both.

There are clear trends common to all the central institutions in their use of strategies in relation to different types of innovation. Although one single strategy is predominant for innovations in curriculum (empirical-rational) and for innovations concerning new objectives and functions (political-administrative), it is not possible to explain educational innovations in terms of one single operating strategy, but rather as a combination of two or even three strategies.

Chapter IV

INNOVATIVE REGIONS

The review of the case studies of innovative regions will in general terms follow the pattern laid down in the previous chapter. The regions which will be analysed - Leicestershire, Devonshire, Malmö, Wetzlar and York* - have not been chosen because they are necessarily the most innovative regions in their country, but because they are involved in innovations to a fairly high degree and are continuously trying to improve their own practice.

Also in this chapter we will seek to deal with the first two of the tasks set out in Chapter II, namely to compare the process of innovation in the regions with the assumptions behind the P-R-D-D model and to see whether different types of innovation can appropriately be "processed" according to the model.

We start with an analysis of the characteristics of each region. They differ in their administrative structure, in the following respects particularly:

1) Relationship to central authority;
2) Relationship to and authority over schools;
3) Relationships with public interest groups, and professional and managerial groups.

These relationships, partly defined in statutory terms (academic control, financial control, etc.), partly developed through tradition, have an important influence on the innovation process.

We shall analyse the innovative practices and the process of innovation in relation to the categories and model described in Chapter II. In particular we shall analyse the problem identification phase and the whole process of policy formulation, policy adoption, and the development and implementation of innovation. On this basis we shall try to identify different strategies for innovation as described in Chapter II.

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* See Annex I.

LEICESTERSHIRE REGION

Leicestershire County Council is one of the English local education authorities. It is responsible for about 300 schools, of which about 250 are primary schools and 50 are secondary schools. In addition, there are some special schools and institutions for further education.

The county has heavily populated suburban districts, medium-sized towns and small villages. Many primary schools are small, some employing only two teachers, others only one. On the other hand, upper secondary schools enrolling about 1,500 students are envisaged.

The county covers only 830 square miles and communication is very easy, no one point being more than 50 miles from the central administration.

The County Council in England is the local education authority (LEA). Its Education Committee is one of its important sub-committees responsible to it for the formulation of policy, as well as for carrying out routine items of administration.

Innovations in England and Wales(84) should be considered against the background of the 1944 Education Act. In particular, any new policy has to fall within the statutory regulations laid down in that Act. The fact that English legislation is so general and leaves great room for political manoeuvre should not disguise this basic statutory requirement.

At the time of the 1944 Act, although both political parties favoured educational reforms, the Labour Party was more inclined towards establishing comprehensive schools, while the Conservative Party's aim was to establish quality through reform of an existing secondary school system which had grown up after the 1902 Education Act.

Under the 1944 Act there is a great deal of freedom for the local education authorities to develop their region in accordance with the circumstances and traditions of their own areas. This is particularly evident if one considers the variety of schemes put forward in post-war Britain. The Ministry (DES) has veto power as far as development plans are concerned, and it can also use a financial veto as a control over LEAs.

The local education authorities in England and Wales have a much more powerful position than other local educational authorities elsewhere in Europe. Administrators are here as elsewhere

not appointed on political grounds (although in the case of Directors of Education, Government authority confirms an appointment). Their task is to give the Committee the best professional advice in the formulation of policy and to prepare for a particular policy when a decision is taken. The administrative officers have a key role to play in the formulation and implementation of policy. Holmes(85) says in his study:

> "The role of the administration is clearly crucial if new policies are to succeed. The Director and his staff have to establish satisfactory relationships with opposite numbers at the DES (Department of Education and Science). They also have to get on well with members of the Authority's committees and at the same time win the confidence of teachers, parents and other groups within the community."

THE LEICESTERSHIRE EXPERIMENT

The county of Leicestershire is famous for its "Leicestershire Plan" which started as an experiment in 1957. In discussions at national level in which social problems were widely debated and as a result of sociological enquiries, evidence accumulated to suggest that the English secondary school system was operating to the disadvantage of working-class children and that middle-class children were over-represented in the secondary grammar schools. In 1957 the Director of Education in Leicestershire proposed a limited experiment to modify the structure of secondary schools in Leicestershire. From 1957 until 1969 this experiment was gradually extended and the movement towards comprehensive reorganisation of secondary education in the country as a whole has been assisted by the results of the Leicestershire plan.

In addition to these changes in the structure of secondary education, the Leicestershire schools have been in the forefront of reform of internal organisation in both primary and secondary schools. This is so particularly in the following developments:

1) A move towards greater individualisation of curriculum and the changes of personal relationships in the school;
2) The creation of vertical age groups, particularly in the primary schools and unstreamed primary schools;
3) The "Integrated Day" in primary schools where individual pupils and groups of children follow specific programmes, building on their specific interests and the provision of appropriate materials and working space;
4) Advanced curriculum practices, in science, mathematics and modern languages, and music in the primary schools, and other curriculum innovations, particularly from the Nuffield projects at the secondary school level;
5) The school environment, particularly through the construction of new buildings designed for a modern curriculum(86).

STRATEGIES TO DEVELOP AND IMPLEMENT THE LEICESTERSHIRE EXPERIMENT

The initiative was taken by the Director of Education in a memorandum of 1957. He proposed two areas of the county as experimental areas where the plan could be tried out. The plan was based on a reorganisation of secondary schooling towards a "comprehensive solution" which was very different from existing plans. The Director in proposing the plan took the following steps: he first got the support of his Deputy, a highly respected administrator in the region: then he gained support from the man who for years had been chairman of the Education Committee and the County Council; he carefully consulted with headmasters and teachers; and he established a plan within the framework of his regular budget. At the same time the proposal did not infringe any major clause of the 1944 Act; furthermore no schools were to be closed and the point of transfer between primary and secondary schools remained the same. The Ministry therefore could not on legal grounds object to the plan. The public was regularly informed, and the Director was assured of support in general, and specifically in the experimental areas.

In proposing the plan the Director was careful not to interfere with the "integrity of the schools" and therefore most teachers kept their jobs and reform was gradual over a period of several years.

The experimental districts played a key role in the strategy. The Director made a successful choice which was based on intimate knowledge of the area by members of the Council and also took account of population growth and movement. The favourable assessment of the first regions made it easier to spread the experiment to districts in other areas.

To implement the plan in Leicestershire the Director of Education could operate only through the following:

1) Headmasters play a key role in the planning and development of curriculum (category 4). Headmasters in England have a particular freedom and normally no one in either central or local government interferes with what is happening within the schools. The Director established relationships with the headmasters which made it possible to encourage teachers to accept the policy.
2) The local authority had 24 advisers who gave help and assistance to local schools. They were used extensively in the introduction of the new scheme.
3) The permanent administrative officers, including the Deputy Director responsible for services, had key roles to play in the reorganisation of schools.
4) The local authority by statute formally appoints both headmasters and teachers in the schools. Leicestershire County, over a long period of 30 years, has tried to establish criteria for selection which encourage innovation. Thus, appointments have been a key instrument of the reform.
5) Examinations play an important role in all innovations. In England and Wales some examinations are administered by the school itself (internal), some by the regional authority (e.g. the 11+ exam.), and some are run by outside (external) bodies such as the Examination Boards. Leicestershire was particularly anxious to introduce internal examinations. The experiment made it possible to abandon the 11+ examination and to move away from external to internal examinations.

From the above outline it is clear that a major element in the strategy of change in Leicestershire has been a political interaction process which includes negotiation and co-operation among central government, political parties, national teacher organisations, the public, and local authority committees. This

process, if it is managed skilfully, can produce very impressive results without the use of formal research and development approaches, as can be seen in Leicestershire.

Leicestershire has also experienced a number of innovations in the methods and content of education, and in this respect local advisers, headmasters, and subject associations have played the most important role. In these innovations occasionally the schools develop innovations themselves; usually they adopt innovations from other sources - such as the Nuffield Foundation projects or projects run by the Schools Council. A long history of successful work done in Colleges of Education has provided a climate for curriculum innovation.

DEVON EDUCATION AUTHORITY

The case study of the Devon Education Authority(87) is concerned with the reorganisation of secondary schools, and innovation in pre-primary education. Both illustrate typical processes for innovation in English local authorities and, together with the case study of Leicestershire, give an interesting view of the type of processes which facilitate changes at the local level in England.

In 1965 the Department of Education and Science sent out a circular (10/65) requesting local education authorities to prepare to submit plans for reorganising secondary education in their areas on comprehensive lines. This request was backed up by the allocation of funds for school building. This was in the days of the Labour Government. In 1970, however, following a change in government, another statement was sent out to the local authorities saying(88):

> "The aim is to ensure that all pupils shall have full opportunities for secondary education suitable to their needs and abilities. The Government, however, believe it is wrong to impose a uniform pattern of secondary organisation on local education authorities by legislation or other means. Circular 10/65 (1965) is accordingly withdrawn..... The Secretary of State will expect educational considerations in general, local needs and wishes in particular and the wise use of resources to be the main principles determining the local pattern....."

It was in this period from 1967 to 1971 that the creation of a new secondary scheme in Devon took place.

THE BARNSTAPLE REORGANISATION

Until the mid-1960s the English secondary school system was generally selective. Following an examination at 11 the most able 20 per cent of children(89) went to a grammar school and the majority of the remaining 80 per cent to secondary modern schools. For those who went to grammar school there was the expectation that they would stay at school until they were 18, and enter higher education. Most of the children in secondary modern schools left by the age of 15 or 16.

The Barnstaple scheme eliminated the eleven-plus selection examination by establishing comprehensive secondary schools to replace its three secondary modern schools and one grammar school in the area. In addition to the creation of a comprehensive secondary school for children from 11 to 16 years of age, the Devon Education Authority won approval to relocate the sixth form. They proposed to place the grammar school sixth form in a technical college and offer a comprehensive range of subjects for students from 16 to 18 years of age. When the plan is achieved, Barnstaple will have a system of comprehensive curriculum for pupils from 5 to 18, in what is described as a "seamless cloak".

THE PROCESS OF INNOVATION

To comply with the directive from the Department of Education and Science to submit plans for reorganisation of secondary schools, the Barnstaple Academic Board (composed of the heads of the secondary modern schools, the head of the grammar school, and the principal of the technical college), was commissioned to develop plans for its area. After considerable deliberation this group submitted plans to the chief education officer in 1967.

On learning that the reorganisation scheme was acceptable to the Department of Education and Science but that funds to build buildings to implement the scheme would not be granted for many years, the chief education officer requested that the Barnstaple Academic Board develop a second reorganisation scheme.

While the Academic Board was at work on its second plan, new

ideas about reorganisation were being developed in the Education Authority in County Hall in Exeter. Before the Academic Board completed its second plan, the ideas generated in County Hall were presented as a scheme to the Academic Board. Support for the County Hall scheme was less than complete among the members of the Academic Board; nevertheless, it became the reorganisation scheme, and an officers' working party, which co-opted the Academic Board and was chaired from County Hall, was created to refine the scheme. During the refining stage in the development of the scheme, knowledge of its shape was deliberately limited to members of the officers' working party. While key members of the administrative staff found it possible to give support to the scheme, there were still a number of problems, the most important of which were:

1) To obtain the agreement of the Department of Education and Science and of the Education Committee in Devon;
2) To obtain acceptance from the public, particularly in Barnstaple;
3) To obtain acceptance from headmasters and teachers involved, particularly the grammar school.

When the public learned about the proposal serious criticism was raised against the plan. The professional sector, particularly the teachers in the grammar school, were opposed to major parts of the proposal.

When it was clear from the deliberations of the officers' working party that the Department of Education and Science would probably approve the scheme, activities were started to win support in the Barnstaple area. All teachers were informed: a meeting of teachers was also considered - but rejected, since it was felt by the education officers that it would do more harm than good.

By October 1968 it was widely known that a radical scheme would be proposed and warnings began to appear in the Press from both parents and influential educational groups (including the grammar school). In particular, it was felt that the sixth form would be destroyed and that the best teachers would leave since they would not be attracted by the new scheme. Also many felt that the grammar school would be destroyed and that the mixture of so many different types of students would create severe discipline problems. The reactions may be interpreted as an illustration of how a certain group feared the loss of status. In November 1968, however, the scheme was accepted by the North Devon Divisional Executive and given its blessing, and it was also approved by the

governing bodies of the technical college and the four schools directly involved in the scheme. The Governors of the Barnstaple Grammar School and of one of the secondary modern schools, however, were opposed to the reorganisation.

In January 1969 the County Education Committee gave its approval, followed by County Council approval a week later. After this a public meeting was held which seems to have been a rather "nasty affair"; some talked about the destruction of education in the region; few concentrated on what the new establishment offered. In the end the meeting had no significant meaning since it was faced with a "fait accompli". The Department of Education and Science had its own problems since this new scheme meant allocating resources for further education and secondary education to the same institution. One problem was that the scheme was looked upon as a way of spending "further education" money for schools; another problem was that the regulations for further education and schools are substantially different.

The Barnstaple Grammar School Parent-Teacher Association was against the scheme, as were the Joint Four, a national association of teachers drawn mostly from the selective grammar schools. A few teachers resigned. In May 1970 the Secretary of State for Education and Science in London gave final approval to the plan.

MANAGEMENT OF THE PROCESS

The local authority had, in principle, only the following instruments to influence the development of the new scheme:

1) Mass media were used effectively by the Devon Education Authority. As a result the region attracted a number of well qualified teachers interested in the scheme.
2) The Authority had very good working relationships with the Department of Education and Science, which looked upon the local authority as one with solid practice and sound innovative ideas.
3) The education officers, through careful and extensive reading, used ideas from other innovations in their own development work.
4) The Authority, to some extent, used experts other than the traditional educators for their planning, including experts from the health authority (in connection with the pre-school innovation programme discussed further in the

case study), staff from the local university and consultants from outside.

5) In the local authority itself there exists a general overlap of responsibilities. This is a consciously developed strategy to involve as many people as possible in innovative planning.

The process in Devon has been described in detail to provide another example of a process of innovation which is probably more a political process than anything else. This does not mean, however, that the process did not take research findings into account. The problems had been identified through long discussions at the national level and through research reports.

THE MALMÖ REGION

The reforms of Swedish education were prepared by several commissions and also by experimental work in several regions throughout the whole country. Much of this experimental work was not systematically organised, though most of it was initiated by the NBE. In 1958 however the NBE selected seven special experimental schools to develop particular carefully evaluated innovations, one of which was a municipal high school for girls in Malmö. This school initiated a number of experiments, such as flexible groupings, inter-subject instruction, team teaching and individualisation.

In 1962, when the headmistress of the Experimental School was appointed Assistant Director of Education in the School Office for Malmö, she brought with her the idea of creating a development centre for the whole Malmö region. With such an expansion it would be possible to give equal consideration to all levels and types of school, secure the co-operation and involvement of many teachers in different schools, and ensure that the results of experimentation would not depend entirely on teachers in highly selected experimental settings. In 1964 the NBE, in a board decision on State financial support, finally recognised the Malmö educational development centre; its main objectives were(90)

> "[to find] practicable ways of giving effect to the intentions of the educational reforms proposed or already decided, also at the levels higher than the compulsory school, [and] to facilitate the progressive revision of the curriculum".

Sweden is divided into 24 counties, of which Malmöhus, situated

in the extreme south-west of the country, is by far the most densely populated, with the largest absolute population. Malmö, the biggest city in Malmöhus, is the third largest city in Sweden.

Each of the 24 counties has its own County School Board. The boards appoint teachers on the recommendation of individual municipalities and are also responsible for the in-service training of teachers in the county. The county is responsible for the implementation of the "teaching plans" laid down by the central government (through NBE). Compared with an English local authority, a Swedish county has less authority and freedom of manoeuvre, in particular concerning the main points of the curriculum which is decided by the central authorities.

In the city of Malmö the Malmö City Board of Education, which comprises 11 politicians elected for a term of four years, is the responsible body for all schools in the city. The City Board has a school office in Malmö headed by a Director of Education and three assistant directors who are all appointed directly by the Government in Stockholm, on the recommendation of the Malmö Board of Education in consultation with the county school board and the NBE. The Educational Development Centre, therefore, was organised directly under the City School Office.

Since 1962 there has been an Institute for Educational Research at the School of Education in Malmö - now the biggest educational research unit in Sweden - which plays an important role in the research and development work in Malmö. Research in the School of Education is predominantly funded by the Research and Development Department in NBE [see the study by Vormeland(91)].

The body responsible for the work of the Malmö Educational Development Centre is the Planning Group, which is appointed by the NBE on the recommendation of the City Board of Education. It is composed of the Director of Education from Malmö (Chairman), the rector of the Malmö School of Education, one scientific expert of the Department of Educational and Psychological Research of the School of Education, one representative of the county board, an experimental leader and an assistant director of education.

The Planning Group appoints an Experiment Committee whose members are chosen to represent the most important on-going projects. This group prepares a programme of experiments in co-operation with city schools participating in experimentation. The Planning Group examines this programme, gives its approval and submits it to NBE through the City Board of Education. The NBE examines the programme and determines the State contribution to the activities.

The School of Education is therefore through the Planning Group directly involved in the experiments in the City of Malmö. In addition, this School of Education has an on-going research and development programme which to a large extent is based on school experiments in the Malmö region.

TYPE OF INNOVATIONS

A number of innovations have been introduced since 1962. Most of them are in the curriculum area (our category 4), such as training in study techniques, team teaching and work with variable pupil groups, and the development of learning materials and curriculum revision. They are either planned outside Malmö (and adapted for testing by the Development Centre), initiated by the Centre itself, or originate from the School of Education on the basis of experiments initiated in Malmö. Examples of such projects are: individualised mathematics teaching (IMU), teaching methods for German (UMT), learning studio, closed circuit television projects, an experiment in flexible pupil grouping, flexible timing and team teaching (PEDO), new forms of practical vocational orientation, compulsory music teaching, instruction by tape in typing instruction, remedial teaching, expanded pupil co-operation in the planning of the curriculum, and co-operation between pre-school and lower level of the comprehensive school.

In the Institute of Educational Research there are at present 19 exclusively school-related projects which include material-oriented projects, teacher-oriented projects, pupil-oriented projects and projects mainly concerned with the working environment and organisation. In many cases they are evaluation projects of the experiments initiated by the Development Centre, but independent projects are also organised in the schools as direct research projects.

THE PROCESS OF INNOVATION IN MALMÖ

An important characteristic of initiative in innovation in Malmö is that teachers take part, to a large extent, in the discussion of priorities and in the creation of projects. However, the persons who played the key roles in establishing the Development Centre have probably also been most instrumental in the

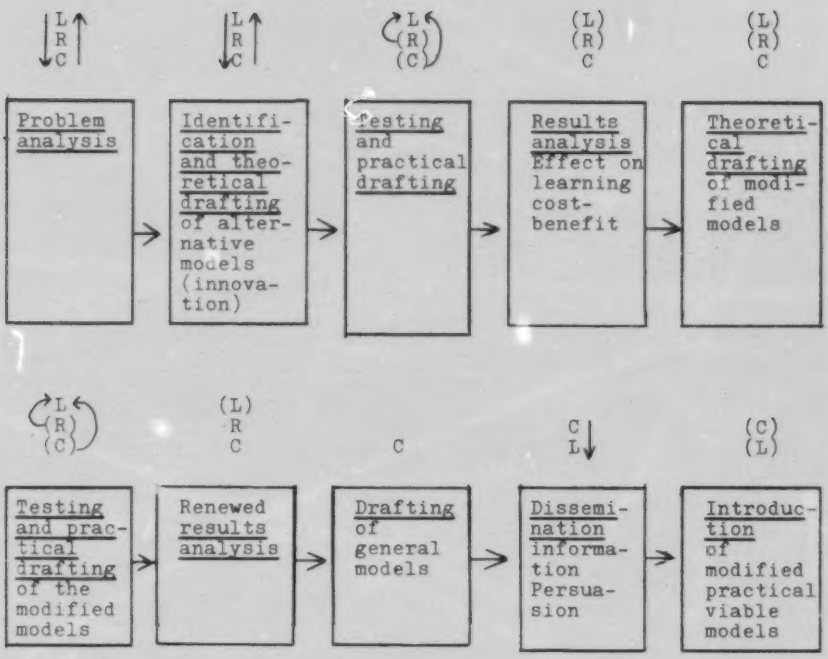
creation of projects. In Malmö there are 200 teachers and head teachers who are members of so-called subject-groups with the specific task of analysing problems relating to instruction in their subject in the region and of proposing innovations within the framework of the curriculum guidelines. This is probably the most important source of information for problem identification in the region. Until recently no other formal systematic problem identification has existed. Another important characteristic of the planning is that all innovations are related to the overall objectives of the curriculum. The new curriculum of 1969 for compulsory schools has to a large degree been influenced by regional developments. There seems to be agreement in Sweden at the regional level that the objectives of the innovation process are to find new and better means to meet the objectives of the stated curriculum which is decided at the central level.

The planning of innovation in Malmö is done by the planning group and the experiment committee. It should be noted, however, that Malmö has a network of international contacts which helps the innovation process - in particular, contacts with the U.S. and Britain have had influence, as well as contacts with other Nordic countries.

The model for experiments in the Malmö region has a number of similarities with our planning-research- and-development model and with the general problem-solving approach, and is illustrated in the figure following(92):

If one looks at the rather systematic process outlined in the diagram, including the evaluation and revision, one would think that this has a thorough, systematic, scientific basis. From the discussion of Malmö, one observes that the researchers at the School of Education have difficulty in evaluating the experiment with traditional tests and evaluation procedures. To a large extent the researchers have not been able to influence the planning as they would like to have done and have too often readily accepted the auxiliary role assigned to them. The experiments by their very nature cover a number of variables and in many cases the researchers find it difficult to establish sensible evaluation procedures which cover all the relevant variables. In spite of this, a number of important evaluations and recommendations have come out of the experiments in Malmö.

The dissemination of regional experiments in a country with central administration of educational planning gives rise to some specific problems. A region is responsible for the dissemination



The diagram shows experimentally for the various phases of development a possible sharing of work by the central school authorities (C), the research institutions (R) and the local school authorities (L).

of results from experimental settings to other schools in its own region if the innovations can be interpreted inside the framework of the curriculum. Innovations which do not fall into this framework, however, cannot be implemented without a policy decision by the central government. Problems related to regional development, the relationship between regionally initiated experiments and research and development from the Schools of Education, and the role of research in the decision-making process will be discussed in Chapter VII.

THE WETZLAR REGION

The case study of the Wetzlar region, partly a history of the creation of comprehensive schools in West Germany, is another example of a region governed by a strong administration, this time represented by the State of Hesse.

West Germany is a Federal Republic of ten states (Länder) and three cities (Hamburg, Bremen, Berlin), each divided into a number of districts (Kreis). The district has a long tradition in Germany as a political and administrative body, but its character has undergone substantial changes. It is both a self-administrative, political structure and at the same time the lowest level of State administration. After the war the distinctions between the district as a self-administrative unit and the district as a unit of the lowest level of State administration were redefined by law. A district is governed by a Council and a Committee which takes care of the day-to-day business and the administration is headed by a Landrat who is responsible for both the day-to-day affairs vis-à-vis a district council but also responsible vis-à-vis the State government for State affairs.

An important development over the last few years has been the concentration of public administration, which means that the district now has more responsibility which previously was carried by smaller communes into which the district is divided. Also, a transfer of responsibility for schools from the communes to the district has meant a substantial increase in the power of the district.

The district of Wetzlar has its own school administration, a School Education Office which is responsible under the Minister of Education and Cultural Affairs in Hesse for education in the district. The district has inspectors for each type of school in the Kreis, and a School Psychology Department. The curriculum is laid down at the State level and the School Inspectorate supervises what is taught and the arrangements for teaching in the schools. By law it is decided that before a major reform is proposed, approval must be sought from the parents (District Parents' Councils) and teachers (through their associations). It is only in very rare cases that a district takes the initiative in innovation in Germany. Also, in the case which is described in the study by Metzner and Probst(93), Wetzlar did not develop the innovation by itself. It was partly discussions and developments in the Land, and in Germany in general, which led to the reorganisation of the secondary school.

The case study begins with a description of post-war Germany, its progress in both the social and economic fields and the troublesome process of changing an outdated school structure into what was hoped would be a better structure. Over a period of more than 20 years the debate about secondary school organisation has been

going on in West Germany. A number of recommendations from different unions, political parties and task forces have been made to both the State and the Federal Government but the hard fact is that very little has changed in most States during this period. It seems clear, however, that for some few States in Germany, reorganisation of the secondary school structure is now under way on a full scale and the State of Hesse is in the forefront of this field.

The first careful attempt at the Federal level to formulate a policy for the reform of secondary education was the recommendations submitted by a task force (Deutscher Ausschuss) in 1959 where the tripartite structure was maintained, but with modifications. The main argument used for not giving support for the skeleton plan was that more research was needed before conclusions could be drawn. In 1960 in Bremen and 1962 in Wiesbaden, working parties indicated the need to eliminate the rigid tripartite system and facilitate a "dynamic development of the school system".

In 1964 the Ministers of Education and Cultural Affairs of all German States announced the Berlin Declaration which drew attention to similar trends in other European countries and recommended the creation of new types of secondary schools. The Declaration was supported by the teachers' unions in 1965 and trade unions in 1966, and a plan was drawn up for a systematic development of comprehensive schools.

THE REORGANISATION OF THE SECONDARY SCHOOL IN HESSE

Before the comprehensive school developed, many States in Germany, the State of Hesse being one of the first, introduced a so-called orientation stage (Förderstufe) between the primary and secondary school (covering grades 5 and 6). Instead of being selected for either the Gymnasium, the Mittelschule or the upper stage of the Volksschule, the students will be kept together in the same school. Experiments at the orientation stage proved that the arrangement helped to increase the number of pupils entering secondary schools. However, the increase in enrolment in the academic secondary schools (gymnasium) has been very small.

The comprehensive school idea grew out of the orientation stage experiments and also from discussions inside and outside the country, and was particularly influenced by Scandinavian and British reforms. The rigid vertically structured tripartite system was to be replaced by horizontal divisions into successive stages.

The general idea of experiments in the 1950s was that they should prove that the reorganisation was better than the old system. In many ways, since such evaluation results were difficult to obtain, the experiments delayed necessary restructuring of the system and were used partly as a conservative mechanism.

In Hesse, the planning of comprehensive schools started in 1967, although a number of discussions had been going on for some time before. A special law for introducing comprehensive schools was established in 1968 which gave the districts the framework for establishing comprehensive schools if "conditions so allowed". In general the law was widely accepted, with some protests which maintained that the proposed measures had not been sufficiently tested. It was also clear that the Christian Democrat Party and the National Democrat Party were against a general clause for integrated comprehensive schools. Several teacher associations - particularly secondary school associations - were now against the arrangements.

The State Education Department continued with the planning, however, and organised local planning groups consisting mainly of teachers. It also established a central commission on the curriculum and liaison arrangements with researchers in order to gain information about curriculum research in other states. Most of the work was aimed at creating new syllabuses, objectives, content and methods for the new school.

Wetzlar was one of the districts in Hesse which agreed to participate in the comprehensive school reorganisation. Wetzlar was ruled by a Social Democrat Party which was favourable to reorganisation. (It should perhaps be noted that in England Leicestershire County Council is largely Conservative - so too is Devon.)

The process was clearly political: in fact, the idea was first established at a Social Democrat annual meeting in 1967. The Minister of Education in Hesse gave his approval the same year and the working groups mentioned above were established. Later, the mayors of all communes were invited for discussions and agreement was reached about the introduction of the orientation stage and comprehensive schools. The Parents' Council, which has statutory power, agreed to the reorganisation. To some extent a certain economic pressure was evident since about 50 per cent of the costs for school buildings come from the district.

STRATEGIES FOR THE INTRODUCTION OF COMPREHENSIVE SCHOOLS IN WETZLAR

1) Although a number of discussions and commissions were being conducted throughout the 1950s and 1960s (also at the Federal level) in practice very few States started a substantial development in the direction of a reorganisation. The forces therefore in West Germany to preserve a highly selective system were very strong.

2) The process of reorganisation of secondary schools in Germany was, as elsewhere, mainly political. Political bargaining, endless discussions back and forth in commissions, slowly built up a pressure favourable to reorganisation. Wetzlar, in Hesse, was one of the many districts indirectly influenced by these processes.

3) The strategy in general was to establish a few experimental schools, carefully controlled, which would prove the necessity of reorganisation through comprehensive schools. It can be seen in West Germany, as well as in other countries where structural reforms have been introduced through the same strategy, that the use of experimental schools in this sense to a large extent has been a conservative mechanism. In particular, the German scientific tradition seemed to underline the necessity of hard data before any policy steps could be taken, and this was a main reason why structural reforms were delayed.

4) The real changes occurred as a result of political pressure and also by the use of economic control measures and the transfer of power from the communes to the districts.

5) Also at the district level the same process of political bargaining and development through committees was the main strategy for development. Also at this level the reorganisation was based on the authority of "experts" and if possible supported by hard data from scientific investigations.

The power of teacher unions in Germany dominated the strategy, and educationists, senior teachers particularly, were used to plan the introduction of comprehensive schools.

THE YORK COUNTY BOARD OF EDUCATION

When we described the Ontario Institute for Studies in Education (OISE) reference was made to the reforms in education throughout the whole Province, particularly the reorganisation of

the counties. In the early 1960s Ontario was decentralised into small school boards. As from 1964, however, a gradual concentration started. In 1969 the York County Board was created (on the basis of the new statutes in Ontario) by the amalgamation of the existing six high school, fifteen public school boards and three schools for the mentally retarded.

York County, situated on the outskirts of Toronto, has a population of about 150,000 which is steadily increasing by about 12,000 over a four-year period. The southern part is "dormitory" to Metropolitan Toronto. The county is divided into four education areas for administrative purposes, each having about the same number of students, teachers and schools. There are in all 94 elementary schools, thirteen secondary schools (grade 9 to 13) in addition to three schools for the educable retarded and one secondary vocational school. The revenues of the Board come mainly from municipal taxes and provincial grants (51.7 per cent and 47.8 per cent respectively in 1970).

After its formation in January 1969 the Director of Education presented a series of papers dealing with aims and objectives of the York County and with ideas for innovative programmes. There seemed to be general agreement about the Aims and Objectives which the Board finally approved. Generally these provided for flexibility, maintaining different options in the system, giving high priorities to the three Rs, fostering the ability to communicate articulately, extending opportunities for gifted children, providing more support services: psychological, guidance, special education, and integrating objectives so that there would be a continuous programme from kindergarten to grade 13. The Board has stated specifically that it wants to use incentives to keep up the quality of staff and to involve teachers as much as possible in any development work that can improve the quality of teaching.

The administrative set-up in York has some interesting features in that in the line organisation there are only four positions, i.e. Principal, Superintendent of Area, Superintendent of Operations and the Director. Many middle-range, line-associated positions common to other boards of education have been replaced by staff personnel (e.g. master teachers). There is great flexibility in the organisation and a number of incentives which give teachers and headmasters freedom to express their opinion and to participate in decision making. As we have seen in other cases above there is a trend towards "non-hierarchical" administrative structures. The

change from "inspectors" to "advisers" is one such change. It is important to consider whether this is merely a change of title or a real change in function.

In addition, specific divisions of operations, planning and development (including a research office) have been set up, together with an organisational development unit and a unit for communications and information systems. These units - in particular the planning and development unit and the organisational development unit - play an important part in the innovations which are described in the case study by Loubser, Spiers and Moody(94).

TYPE OF INNOVATIONS

In its short history, starting from the work on Aims and Objectives, the county has formulated, adopted, developed and implemented a number of interesting innovations. For example, it has developed four kinds of secondary school, each in its own way different from the usual kind of school. The Thornlea Secondary School(95) is a school with a number of curriculum projects: another "School of Arts" will combine a basic academic programme with specialised instruction (music, dancing, drama, visual arts and commercial and industrial arts); another "hard school" will emphasize self-discipline and a high degree of academic content. The latter is described as a "brand-new old-fashioned school. There are a number of other innovations in the region and the case study concentrates on three major developments which are summarised below.

THE CURRICULUM COMMITTEES

One of the innovations described in the case study is the creation of the curriculum committees. The committees represent an attempt on the part of the Board to involve the teachers in curriculum development. A number of committees have been established representing different subject areas; they bring together teachers from both elementary and secondary schools and strengthen their relationships. The committees discuss means of improving the evaluation of student progress, examine various methods of reporting, improve the methods of judging experimental courses, improve the methods in examining and selecting text-books and other aids,

advise in establishing guidelines for facilities and recommend changes in matters important for the curriculum.

In many ways this programme is similar to the English subject associations and the many local subject groups. English teachers are heavily involved in the development of curriculum. Thus, the curriculum committees in York are an innovation toward greater teacher involvement comparable with the situation in the U.K.

THE MASTER TEACHER PROGRAMME

The guiding philosophy of the master teacher programme is to assist teachers in professional development in a non-threatening manner. This is done by highly-skilled and experienced teachers, called master teachers, though they have no formal (de jure) authority over the teachers when they assist. This is a departure from the traditional inspectorate system which was formerly the administrative mechanism for controlling the curriculum. The following criteria are used in the choice of a master teacher:

a) he should be a specialist in his subject field;
b) he should be resident in York;
c) he should be able to play a supporting role;
d) he should have a relatively junior position (administratively) so that the psychological distance between his role and that of the teacher is not large; and
e) he should be a practising teacher.

As a rule the teachers themselves request assistance when they need the help of a master teacher. The master teacher's functions are mainly in the area of instructional techniques and methods rather than curriculum content.

THE ORGANISATIONAL DEVELOPMENT UNIT

The Director of the County Education Board became increasingly aware that most problems in an organisation stem from a lack of communication among the people in various roles. Having done some investigation he developed the idea of an "organisational development unit" as an integral part of the organisation of a school system. With some help from OISE a unit was established and a number of projects have been carried out.

The major objectives of the organisation development programme are(96):

1. To create an open, problem-solving climate throughout the organisation.
2. To supplement the authority of position with the authority of knowledge and competence.
3. To locate decision-making and problem-solving responsibilities as close to the information sources as possible.
4. To build trust among individuals and groups throughout the organisation.
5. To maximise collaborative efforts.
6. To increase throughout the staff the sense that each person's contribution is important.
7. In doing one's work to focus on the real needs of a situation rather than on "past practices".
8. To increase the ability of work groups to control and to direct themselves.

A number of projects have been implemented with administrative groups, teachers, business officers, secretaries, guidance personnel and principals. In the opinion of many, this programme is one of the greatest change factors operating in York County and has so far had an impressive impact on the system as a whole.

THE PROCESS OF INNOVATION

The study of York County illuminates the relationship between various innovations and the different processes involved. The approaches to innovation vary considerably in an organisation that is as flexible and "problem-solving oriented" as the York County. No formal procedures or mechanisms are actually established, except for the planning and research department and the organisational unit whose main objective is to facilitate innovations rather than to plan and control the innovations which are introduced. Variability and flexibility therefore characterise the approach to all stages in the innovative process.

Key problems in education in York County are identified with the help of teacher groups, parent groups, school groups and political bodies. In particular, the research office in the administration plays an important part in this process. It is set up to design and conduct research, support committees, groups and individuals wishing to undertake research and establish exchange and supporting relationships with universities, CISE, Department of Education and other agencies. However, it plays an important

part in the identification of needs and priorities based on the problems raised in discussions.

The various proposals for projects are fed to the Division of Planning and Development which, in co-operation with the Administrative Committee, formulates a proposal. At this point different alternatives have been discussed. The Administrative Committee, however, still intensively reviews possible alternatives before the adoption of a specific proposal. In the case of county-wide innovations the Administrative Committee and the Board of Trustees are always involved. Consensus is sought since a project will depend on the support and enthusiasm of all concerned.

Once the innovation is adopted it is usually implemented under the supervision of the administration, depending on the nature of the innovation. In the case of county-wide innovations, superintendents of area contact principals, who inform teachers of the new practice. Specific field tests are sometimes arranged, especially for curriculum projects. (Obviously this is not possible if the proposal involves establishing one or two specific schools in a county.)

There is no single structure for the implementation of new practices, although the Board has been moving towards a rationalisation of procedure.

Evaluation of the innovations is done informally but is continuous throughout the innovation process. In the case of curriculum committees, for example, there has been little evaluation, more so with the master teacher programme and the organisational development programme. Generally, the evaluation of programmes is expected to come from those most involved in them, e.g. the classroom teacher who should benefit from the master teacher programme.

In general, it is felt in York County that innovations should proceed from the "bottom up". This has been the main impact of the reorganisation of the county and the introduction of the programmes described above.

The most interesting part of the York study is that the York County Board has consciously promoted an atmosphere in which innovation is considered desirable at all levels in the system. At the same time, there is a strong commitment to careful planning and participation in the process, and although evaluation has not been done in a formal sense, most programmes have their built-in feedback mechanisms. Another interesting feature is the selection of staff for the purpose of improving the system. The Director here has

played a key role. One important strategy has been to give the specific divisions of the Educational Administration a key role in innovation. In all cases where careful planning has been undertaken the Board has always made adequate financial provision for innovation.

From the very beginning, by working in accordance with the aims and objectives of education in the county, the Board has been open to change and to new ideas from both within and outside its own system.

SUMMARY ANALYSIS OF INNOVATIVE REGIONS

CONTEXTS

Each of the regional levels described in the case studies represents the chief responsible educational administration between the national level and the schools (though in the case of Wetzlar there are also smaller units, communes, with very limited mandates).

The regions differ in terms of their responsibilities. They are part of national administrative systems which have delegated more or less decision-making power to the regions. The degree of authority determines the potentiality for action. We find it therefore necessary to examine in some detail how far the different regions can formulate policy, adopt new policies and develop and implement innovations.

OBJECTIVES AND FUNCTIONS (Category 1)

The formulation of new policies in this field, that is, changing the functions and objectives of the school system in its broader social and economic context, is a responsibility of the Government in all cases. This is true also in the U.K. The case of Leicestershire (and Devon) shows that the new comprehensive school reform was requested by the Labour Government after a rather long "programme identification phase" at the national level. The formulation of this policy at the grass roots level, so to speak, was in this case initiated by the Director of Education in the region. The region therefore had an important role to play in the operationalisation of the new objectives at the stage of policy formulation.

In Malmö and Wetzlar the formulation of policy in this category

is by statute the responsibility of central Government (the State of Hesse, in the case of Wetzlar). The adoption of the policy is secured by national (state) laws. There is no clear example in the case study of York by which to judge the influence of the region in the formulation of policy regarding innovations in this category. In general, however, the regions of Ontario are dependent on the Provincial laws which lay down the general framework.

All regions are actively engaged in the development and implementation processes but they differ in their approaches and procedures (see below).

ORGANISATION AND ADMINISTRATION (Category 2)

All regions are involved in some activity in this category. In the case of Devon and Leicestershire policies are formulated in this area. The Ministry has veto power, however, and also financial power. The same is true in the case of York.

In the case of Malmö and Wetzlar the organisation and administration of schools is laid down by central regulations. In all cases the regions are actively engaged in the development and implementation process (see below).

ROLES AND ROLE RELATIONSHIPS (Category 3)

There are few innovations in this category, only York being actively engaged in this area, apart from some activity going on in Malmö. The same decision-making structure is apparent as for category 2.

CURRICULUM (Category 4)

All regions have some activity in this category. In England and Wales the regions and even the individual school have full authority over the curriculum (see definition Chapter II). As far as evaluation is concerned the responsibility is partly external to the region (e.g. universities), in terms of secondary school examinations. With this limitation (which is obviously a powerful steering mechanism) the schools, in co-operation with the regional authorities, have responsibilities for policy formulation, adoption, development and implementation. The decision-making structure in

Ontario is much the same, the region playing an active role in the development of the curriculum. This seems to be more a matter of practice and tradition than statute.

In Wetzlar the parents and the teachers by statute have veto power regarding any innovation in curriculum. In Malmö this is not the case.

All regions are actively engaged in the development and implementation of innovations in the curriculum (see below).

As we have seen in the descriptions of the innovation processes in the regions, the managerial groups (the Director of Education and his education officers) differ in their relationships to public interest groups and professional groups. These differences to some extent determine the direction and quality of the process, particularly the initiation of innovation.

In Malmö the Director and his staff is the key group in the initiation of innovation. The managerial group uses teachers and researchers mainly as advisers in the process, and as collaborators in the development work. The public is represented in the Board which adopts or rejects innovations. (Their responsibilities are again laid down by law.) Also in Wetzlar the managerial group has the main initiative, and teachers are used in much the same way as in Malmö. In both cases teachers are deeply involved in the process. In Wetzlar, however, also the parents play an organised role in the adoption of innovations.

In the cases of Leicestershire, Devon and York one can observe a different relationship between the managerial group and the professional group. The latter seems to have more power, influencing policy formulation, adoption and implementation more directly. This does not mean that the managerial group has little influence, for it is in fact clear that this group has taken the initiative in all the major innovations described: but their relationship to the professional group is more of a non-directive type. The public mainly influences decisions through the County Council, apart of course from numerous informal activities of local pressure groups (see, for example, case study of Devon)*.

TYPE OF INNOVATIONS

The innovations referred to in the case studies probably reflect the state of development in education in the country in

* Participation in decision-making will be discussed in Chapter VI.

general. Sweden has gone through a long process of restructuring lower secondary education and most of the innovations in Malmö are therefore concentrated on the teaching-learning process. Ontario is in much the same situation, but the innovations in York reflect a somewhat broader perspective including major innovations also in organisation, administration and in role relationships. The U.K. is in the middle of a reorganisation of secondary education, and the main area of concern has been innovations in category 1 (objectives and functions). This is true for both Leicestershire and Devon. Some activity is going on also in relation to the curriculum and to administration and organisation.

Wetzlar has not so far introduced new structures in secondary schools, but is planning such innovations (category 1).

In all regions, of course, innovations are taking place also in the primary school, and in adult education. The above-mentioned innovations, however, represent the largest and the most typical ones.

THE PROCESS OF INNOVATION

The process of innovation is to a large degree determined by the relationships described above. It is of interest to see how effectively our P-R-D-D model of innovation can explain the process as studied in the regions. The following factors seem to be crucial:

a) Linkage: Educational regions play, by nature, a middle man role. Although they sometimes take leadership and initiative, they are small units and have small resources for innovation and therefore they try to link outside resources with internal resources. In the case of Malmö, contacts with the School of Education give up-to-date knowledge about research and innovation. In the case of York, the same is partly true of the contact with OISE. Leicestershire and Devon are not formally linked to any research institution but adopt and adapt developments from sources such as the Nuffield Foundation, the Schools Council and nearby university departments of education. Wetzlar relies only marginally on outside experts but takes note of experiments going on elsewhere in Germany in its own planning. In all regions, an impressive

amount of information is gathered from conferences and seminars and systematic reading of journals and reports. In all cases, new educational philosophical ideas and development projects from outside have been one of the most critical factors in the innovation process. Internally every region has established links with its schools. The relevant sources can therefore be summarised under the headings of outside innovative educators, reports and innovative products, teachers and headmasters in the region, and to a limited extent (except for Malmö) research.

b) Problem identification: Usually one of the key persons in the regional administration has been the initiator of innovation. When the idea is formulated and adopted, usually teacher groups are heavily involved in the operationalisation of the idea. Except for Malmö and York, where teacher groups have worked systematically on objectives, the problem identification phase is unclear and unsystematic. The "problems" are usually defined without the use of any systematic techniques. Rarely do the regions initiate innovations of a more long-term nature.

c) Negotiation: As seen above, the managerial group has the main responsibility in the planning of innovations. Usually, however, conflicts arise and careful negotiation processes are managed by the key education officers. Local interest groups, public or professional, are usually also influential. The negotiation process can be seen as a political process where different interest groups defend their positions.

d) School-based developments: Except for Malmö, and partly York where special resources are available inside the region, the innovations are developed by the teachers, usually in the schools themselves (mainly in the area of the curriculum). The managerial group normally plays a service role in the development phase (through advisers, research staff, information services, etc.). The development process is largely dependent on teacher input, however, and even if outside material is often adopted or adapted, teachers themselves construct much of the material in the innovations.

e) Evaluation: In most cases, evaluation in a formal sense

is non-existent. To some extent it is developed in Malmö and York. Until now there have been no serious doubts about this from the Boards or the funding sources. One would think that the responsible Boards would soon ask for results, or ask whether the innovative practice is working according to expectations. There is more concern in York and Malmö, for example, about the problem of evaluation, but no solutions have yet been found that are likely to improve the situation drastically. Since problem identification and the formulation of objectives is weak, evaluation consequently cannot be strong. If one expects formal evaluation, therefore, one has to set up a more systematic innovation process, which so far has been only partly developed in one or two of the regions.

f) Implementation and dissemination: All regions have responsibility for the implementation of innovations in their region. In fairly centralised systems (e.g. Sweden and Hesse) dissemination of innovations to other regions is in the hands of the central (state) government. In such a situation the central authorities can interpret the "results" of the experiments as it suits general policies: that is, they can disseminate to other regions those innovations which fall within the framework of the accepted objectives. In some cases the regions have felt that those innovations which have been disseminated have not been adequately developed, and in other cases that more important innovations have been overlooked. In fairly decentralised systems the problem is that very little is disseminated to other regions, or is even known outside the development group. The result is that a number of ideas, experiences and products are lost (see further discussion Chapter VIII).

The above analysis demonstrates that the process of innovation as described at the regional level has few similarities with the P-R-D-D model. In fact, none of the assumptions underlying the model are valid at this level. It is not a "rational" process, not a systematically planned and sequential process, and frequently there are conflicts about the direction of change. In the case of Malmö the P-R-D-D model, looked upon as an ideal, is so far only partly adopted (for example, in curriculum innovations). We have not been able to differentiate clearly between different types of innovation and the way they are "processed".

In general, however, the more professional involvement (in particular in curriculum innovations) the more systematic the process and the closer to a problem-solving approach.

Going back to our definition of innovation in Chapter II, we can ask if we are really talking about innovations or only about change with no qualifications of objectives and results. In our opinion, this is essentially both a matter of precision in the formulation of objectives and a matter of validity (i.e. are the innovations worthwhile in relation to desired objectives?).

The innovations started because the managerial group (in most cases), through informal contacts, discussions, negotiations and reading, has come to the conclusion that an initiative is necessary. This is certainly not based on precise methods or a systematic identification of needs. But is it adequate?

This raises the question of whether a higher level of precision is desirable or necessary. In the area of curriculum innovations, commonly seen as a matter of professional judgement, a higher degree of precision is often necessary. Innovations have tended to be based on rather loose optimism about reform (see Chapter IX), and the results are often discouraging. The interesting fact is that in this category only very seldom is an innovative idea (with planning and seriously staged) discussed with parents or politicians. It is left to the professionals. For example, the necessity of "modern" mathematics is seldom questioned, and seldom does anyone try to find out precisely what this innovation will do to the children and the teaching-learning process. The questions and doubts often come afterwards, when it is difficult to change direction.

In a series of innovations, however, it is quite clear that the problem is not one of higher level of precision at the stages of problem identification and policy formulation, but rather the opposite, at least from the point of view of the managerial group. Clarity would divide the already divided interest groups and some sort of compromise, often secured by rather vague formulations, is a useful tactic(97).

One would think that in the long run such tactics would not be wise. Where clear differences of interest exist, one would think that lack of clarity would only postpone a crisis. The alternatives are, either a clear-cut political strategy or a much longer planning phase, with greater involvement of all interest groups. This would possibly bring into the open some of the unnecessary conflicts and hopefully clarify some issues that could form a

basis for action (the normative-re-educative strategy).

STRATEGIES FOR INNOVATION

Systematic research and development (except for Malmö) is not the basis for innovations at the regional level. Other empirical-rational strategies, however, may be used. Selection of personnel is one instrument which all regions use for innovative practices. It is used openly in Leicestershire, York and Devon (see Chapter VI).

One key element in regional strategies is the use of information and outside experts in the process. This expertise, however, is usually controlled by key figures in the educational administration and tends to be used to support existing policies.

The change from the use of inspectors whose main function is to control classroom practices, to the use of advisers, is an interesting change from a political-administrative strategy to an empirical-rational and normative-re-educative strategy. We have not been able to compare the situation in the regions, but particularly in the case of York it seems that this change is looked upon in the region as a real innovation which has had an important impact on the relationship between teachers and the managerial group. The change from inspectors to "advisers" in Leicestershire, and to "consultants" in Malmö, has had similar effects. This change may be looked upon more as a change towards normative-re-educative strategies than to empirical-rational strategies, since the objective is to improve the problem-solving capability of the schools.

Of special importance, however, is the function of the region as a "middle man" in innovation, using linkage as a main strategy. This is an essential part of a "knowledge-utilisation-process", and an empirical-rational strategy.

The regions use this function as a basis for negotiation between interest groups. Particularly in the formulation and adoption phase the process can best be understood as a political process, whereas the development and implementation process is more a professional and managerial process in which empirical-rational strategies are particularly important.

Chapter V

INNOVATIVE SCHOOLS

The schools which were chosen for this study, Oslo Experimental Gymnas, Tapiola School (Helsinki), Rødovre Experimental School (Copenhagen), Countesthorpe College (Leicestershire) and Thornlea School (Ontario)*) were not chosen because they have been identified at any time with a particular innovation. The reason for their choice was that over a number of years they had been continuously able to improve their own practice.

The description and analysis of the process of innovation lies at the heart of the case studies of innovative schools. This is the basis for identifying critical elements in the process, in order to understand how a school can "learn how to learn", or for establishing procedures, relationships and practices which enable the school to learn from successes and failures. The processes will be validated against our P-R-D-D model to see whether different innovations can be processed according to the model.

The schools differ in terms of their objectives and functions. These differences will be studied in terms of their importance for innovative activities.

The internal management of the school is a matter of particular interest, and this will be described. Leadership styles and participation in decision-making, however, will be analysed in a separate context (Chapter VI).

The relationships between the school and its environment also have an effect on the process of innovation. Two aspects in particular will be considered:

1) The involvement of parents and community resources; and
2) The external constraints which form the framework for innovative activities (administrative regulations, laws, examinations).

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*) See Annex I.

EXPERIMENTAL GYMNAS IN OSLO (EG)

The Experimental Gymnas in Oslo has an extraordinary history - at least from a Scandinavian point of view. In 1966, three young high-school students in the academic gymnas in Oslo, dissatisfied and frustrated by the traditional school, started a campaign to establish what they called a "free gymnas". They sent a letter of invitation to all students in Oslo, as well as to the Ministry of Education, proclaiming the value in establishing a free gymnas that would not be burdened with all the constraints and problems which they felt a traditional school had.

The Norwegian upper-secondary school is divided into different streams, the major one being the academic stream to which about 25 per cent of the students belong and which awards the university entrance certificate. The other secondary schools are different types of vocational and technical schools, some of them also leading to studies in higher education(98).

The students who were protesting against the academic school were frustrated by the traditional objectives, content and methods of the school, the authoritarian system, the control they felt from teachers, from the examination system and from the role relationship of teachers and students. They wanted to plan a school with new objectives, with a democratic management where students were involved, a school with modern methods and control. They did not want just to establish a new school: their objective was to change the entire high-school system in Norway. They wanted a school where teachers and students were treated as equals, where students themselves, together with teachers, could shape their learning situation, where every individual could decide his learning programme, and where decisions were taken by all involved in the school on equal terms.

Reactions to the student initiative were quite impressive. Working groups were set up and radical teachers participated in the planning of the school. From the start, however, there were obvious differences about how they should proceed. Some felt that the new school should pay more attention to human values while continuing more or less within the same framework. Others felt that this was impossible without a real change of power inside the school itself. The real discussion point was therefore whether students themselves should have a decisive role in the school, or whether they should only have a say in specific

"student" matters, as in other Norwegian high schools. Those who wanted the students to be involved at an equal level went on with their planning while some of the others left the "movement". A formal proposal about the establishment of this school was sent to the Ministry but the working group had to review it several times before they were able to convince the Ministry that the school was a desirable experiment.

Hauge(99) in his report gives an interesting history of all the difficulties before the school was established: in particular he states the difficulties in getting the school adopted by the Ministry as an ordinary school. Finally, however, the school was given the status of a private school without the right to manage examinations and therefore all students had to take examinations as private students, a procedure which usually entails harder work than for traditional students.

It is interesting to note the differences in opinion about how innovations in a Norwegian gymnas should occur. The responsible people in the Ministry and the Gymnas Advisory Council (Gymnasrådet) felt that a number of experiments which were being planned just at this time within the traditional gymnas offered the best strategy for innovation and reorganisation of the gymnas The student group, however, felt that it was impossible to change the gymnas inside the old framework. They were inspired by "free schools" in other countries, like the Bernadotte School in Denmark and Summerhill in England.

Soon the teachers' union which for a long time had asked for more innovation in the gymnas found that they could not participate in this particular experiment. A tough political debate followed. The Ministry, representing a Conservative government, declined to support the school, and as a result the community of Oslo, which had a Labour government, chose to pay all the costs of the school.

The school started in poor buildings and with outdated equipment but the students and the teachers, despite this difficult beginning, were determined to prove that their school could still succeed. Students were selected from all over Oslo, and the case study shows that there were marked differences in the social background of the students, compared with those attending other schools(100). Even so, students from academic homes were over-represented (as to some extent in many other gymnas in the Oslo region).

Teachers from the traditional gymnas were not particularly eager to work in the school, partly because the school was so untraditional, and partly because it was a basic principle of the school that the students would have a large say in what went on. The teachers were anxious also because the posts were all short-term and did not offer the normal security of tenure.

The stated objectives of the school are of interest(101):

"The objective of the Experimental Gymnasium is to gather experience which can change the present school system. The objective is also to be an alternative to the existing gymnasium."

In a more detailed definition of the school's duties it was also said:

"1. The activity of the school shall be planned in such a way that it serves the personal growth and development of the pupils in the broadest possible way. This means:
   a) extensive pupil democracy
   b) respect for the freedom of the individual and his responsibility
   c) the introduction of elective subjects outside of the curriculum
2. The teacher is to be the expert and counsellor, but shall not act authoritatively.
3. Emphasis is to be placed on co-operation among the pupils mutually, between pupil and teacher and among the teachers.
4. Experimental activities are to be engaged in as much as possible on groups of subjects, the integration and co-ordination of subjects, of classes, of school hours and on the division into groups.
5. The experimental activity must also aim at achieving other forms and norms for the evaluation of knowledge in the final examinations than these now valid."

The school has proved to be creative. Everyone in the school stresses the importance of the school being in continuous change, trying to achieve the best possible solutions in relation to its objectives. It is particularly important to stress that each year, to a large extent, the new body of students in the school is in practice able to change the learning process inside the school.

It must be noted, however, that the school is obliged to compete with other schools in terms of the final gymnas examination which is the entrance examination to universities. To a large extent also it has to follow the traditional curriculum since this is the basis for the final examination.

TYPE OF INNOVATIONS

The most important innovation in the school is that concerned with the school democracy. The General Assembly, where all students and teachers are represented, is the decision-making body in the school. This body controls all activities and all decisions are taken on the basis of "one man, one vote". Teachers as well as students can meet and they have equal freedom to talk and express themselves. The Assembly is managed by a group of five - four students and one teacher - who are chosen for one semester. They take the chair at the meeting (two at each meeting) which is held once a week.

The Council is the school's executive body directly subordinate to the General Assembly. It has all the authority which traditionally the principal and the teachers' council have in a normal school. It is composed of four students and three teachers, the school principal and a representative of the parents. Everyone who wants to sit in at the meetings of the Council can do so. It is closed only during discussions of personal problems.

The principal is responsible for the practical management of the school. Direction on the principal's tasks is given by the General Assembly and the Council. He is chosen by the General Assembly and this position rotates among the teachers. Until now the principals have held office for two-year periods.

The school is also engaged in other innovations such as the integration of subjects, experiments in computer sciences, flexible grouping systems, the use of students as teacher assistants, and so on. The most important innovation, however - the school democracy - on which the whole school is based, is the main concern of the case study where the student-teacher evaluation of the experiment is dealt with in detail.

THE PROCESS OF INNOVATION

The process of innovation in this school cannot be understood by our P-R-D-D model. The school emerged essentially from the debate over control of education and of educational innovation. To a large extent power-coercive strategies were used on both sides and heavy political pressure was applied before a final decision was taken. (The Minister even put a vote of confidence before Parliament on the issue.)

The process of continuous innovation in the school, the internal process, is very different from the P-R-D-D process and can best be understood as a normative-re-educative approach where full involvement of all parties concerned is in the very nature of the activity.

1. Decisions are taken by all concerned and there is no hierarchical structure typical of other schools.
2. Initiative for new innovations comes from anyone in the school and arises mostly out of informal discussions. The new student intake each year often provides the input to these discussions but contributions also come from outside, particularly in the form of theoretical or philosophical influences from individuals and experiments in other countries.
3. The most typical element in the process is the openness to innovation in that problem identification occurs in an informal dialogue among all those involved, and freedom of expression is an essential element in this dialogue.
4. Planning of new innovations is undertaken by working groups set up by the General Assembly and is generally an internal process, though sometimes there is expert assistance from external sources.
5. Evaluation in any formal sense is not intended. However, a number of reports on the school have been issued, usually on the initiative of either the community of Oslo, which provides the funding for the school, or research bodies at the university. The evaluation which is favoured by the school is an informal assessment of everyone involved, both during the process and after innovations have been carried through.

There is no formal dissemination of the results of the school. Obviously, however, it has influenced the discussion of innovation in other Norwegian secondary schools, and similar schools have been created in Gothenburg, Copenhagen and the neighbourhood of Oslo.

TAPIOLA SCHOOL, FINLAND

The case study of the Tapiola School(102) is a description of the process of innovation in a school which originally was designed for educational innovation. It is situated west of Helsinki

in an area which was picked out in 1952 for advanced planning at the initiative of six large social organisations. In this milieu of advanced social planning a gymnas(103) - or the academic high school leading to studies in the universities - was designed. As is usual for this particular type of school, students are selected on the basis of their academic achievements in the junior secondary school. The main selection appears after the 4th grade in the elementary school.

The area in which the school is situated is by no means representative of Finland. It consists mainly of upper-middle class homes with a basically academic background. From the very start, therefore, the school has had considerably greater resources than those of most other schools in Finland. It is also a private school - the most common type of secondary school in Finland - where most of students' fees and other costs are borne by the State as is the case for all private secondary schools.

The State, through its Ministry of Education, is responsible for curriculum guidelines and control of education. The school is controlled through the Ministry of Education, the National Board of Schools and a regional administration.

TYPE OF INNOVATIONS

The innovations which have been developed in the school are mainly concentrated around curriculum developments in different subjects, using new methods and materials. To a large extent this has meant the creation and use of individualised learning material and to some extent also the integration of subjects. Many of these programmes are now widely known and used throughout Finland - especially the programme in music and art instruction. Basically, however, the innovations have been adapted or adopted from other countries - mainly the United States, England and Scandinavian countries. They are not, therefore, new in any sense except that they were new to Finland when they were selected for experiment.

STRATEGIES FOR INNOVATION

1. A Board representing the community, industry and other interest groups outlines the general objectives and principles for instruction in the school. These have to be approved by the Minister of Education.

2. The Board can select the personnel for their schools and they have deliberately tried to attract "progressive teachers". They also appoint the headmaster, who is generally in charge of the daily management of the school.
3. The Board gives financial support to the school, most of the expenditure being reimbursed by the State.
4. Since the Board represents a community which is, by its very nature, interested in progressive social experiments, it provides various incentives for innovation, but these are within a framework of the acceptable objectives as determined by the community.
5. The process of innovation in the school is determined mostly by the headmaster and teachers.
6. The planning of innovations is done by teacher groups elected by the teaching body.
7. In most cases the ideas for projects have come as a result of extensive travel and information gained from outside. The senior teachers and the headmaster are very well informed about innovations going on elsewhere.
8. The climate of the school is basically favourable to innovations and it might be said that there is a social pressure to "behave innovatively".
9. The school uses payment as an incentive to teachers for innovative work.
10. When there are disagreements about objectives, negotiation processes are used to settle the matter. The school is run basically in a traditional, partly authoritarian style.
11. There is no formal evaluation of innovations which are mostly initiated by teachers, developed by teachers and evaluated by themselves. The only form of evaluation is the yearly state examinations which measure the achievement of students.
12. Dissemination of the results of the school's work has been going on for a long time through production of textbooks, participation by the teachers in conferences and seminars, and through the mass media.

THE RØDOVRE SCHOOL

Compared with other European countries, Denmark has so far

been among those with a relatively short compulsory period of education, covering the age range 7 - 14. At the same time, however, there has been a strong tradition, on a non-compulsory basis, for further school education, which is reflected by the fact that about 90 per cent of the pupils in classes 8 and 9 continue on a voluntary basis at present. In 1973 compulsory education will be extended to nine years for all children.

During the 1950s, as in other Scandinavian countries, interest in experiments and innovation was quite considerable. The town architect in Rødovre, a suburb of Copenhagen, put forward his idea of establishing a "youth town" in which young people could be instructed in problems connected with occupations and civics. The idea received support in many circles, including the Ministry of Education.(104) Both Sweden and Norway were heavily engaged in experiments with nine-year compulsory schools. For Denmark this looked an ideal experiment, more or less a "laboratory" for the planning of the "youth stage" of schooling in Denmark. Several schools were, however, already at that time working on educational development in classes 8,9 and 10, among others the Copenhagen Municipal Experimental School, Emdrupborg, and thus contributed to a more practical and fruitful form of instruction in the upper classes.

After committee work and a public report a Bill was passed in 1964 in Parliament setting out the following objectives for a State experimental centre(105):

"1. To test and evaluate the proposed plans for the 8th to 10th forms.

2. To formulate and develop new ideas and viewpoints for instruction in the 8th, 9th and 10th forms.

3. To give orientation and instruction within fields outside the ordinary curriculum of the "folkeskole" as e.g. banking, insurance, communications and family economy aspects which had been developed in the "Youth Town".

4. To act as a course centre for teachers employed in teaching 8th, 9th and 10th form pupils."

In order to carry out the first two points of the plan for the school it was decided to construct a training school in connection with the rest of the buildings in the Youth Town (cf. Point 3).

A modern school was designed with an up-to-date library, an audio-visual section and other facilities. Curriculum plans were drawn up to give an optimal chance for experimentation and teachers were recruited on the basis that they would get some reduction (three hours per week out of 24) for innovative work, as well as

a higher salary as compensation for planning meetings and the writing of reports.

Students were recruited from a larger area than usual, covering most of suburban Rødovre. They were selected not only on intelligence but also according to their interests, and the school in fact tried to establish a "normal" pupil enrolment.

There is a supervisory board which looks after the activity in the innovative centre, which also covers the experimental school. It is composed of representatives of the workers' and employers' organisations, industry, commerce, parents, the scientific and educational institutions and the Ministry of Education.

The Ministry of Education has a direct link with this particular school, and the principal, through the school board, is directly responsible to the Directorate in the Ministry concerned with "Folkeskolen"(primary and lower-secondary schools). All plans have to be approved by the Ministry which also finances the school (i.e. the school is a State school).

TYPE OF INNOVATIONS

The school is basically involved in all types of innovation concerning curriculum development (Category 4). Most projects are common to a majority of the teachers in the school and they work largely as a team in all projects. All projects serve the aim of investigating possible alternatives in the framework of the centrally designed curriculum plans, and therefore they are concerned with the content, methods and organisation of instruction which give the individual pupil the best conditions for developing his special abilities and interests. This attention which surrounds the participants as human beings participating in the educational development work - pupils especially but also the teachers - is a decisive and central aspect of the work in Rødovre.

Examples of projects are: flexible groupings, individualised instruction based on material developed mostly by the teachers themselves, a rotation system which enables students to become acquainted with all the optional subjects, inter-disciplinary activities (particularly within the practical creative field) and team teaching.

THE PROCESS OF INNOVATION

In the early days of the school teacher groups were established to analyse the objectives of the school as they might be operationalised in different school programmes. Very soon individualisation became a key concept in the planning of the school. The Director and educational adviser undertook several trips abroad in order to acquaint themselves with the latest international developments.

Throughout, the staff has been a rather small group, not more than 15 - 20, who have thus been able to work closely together on the development of common objectives and procedures. In addition, every week the Rector has regular interviews with individual teachers during which problems of development are discussed thoroughly. In the course of a school year the staff has 3 - 4 planning days. The school has on one occasion supplemented these scattered planning days with a whole week during the holiday period for thorough discussions of the general lines for development.

In most cases the Rector himself takes the initiative for new projects. He has an educational adviser who also initiates new projects. The management group(106) (the Rector, the Principal and an educational adviser) meets every week to discuss policy problems. From these conferences a number of ideas and initiatives are produced. All the time, however, the Rector and the rest of the management have extensive talks with the teachers about their ideas and only through these dialogues are new projects accepted. The teachers consider that the initiatives and help from the management group are an important and valuable support in their work and welcome even more initiative from this particular group. It should be emphasized that the weekly teachers' meetings, plus the subject group meetings, play a central role for planning as well as co-operation concerning the instruction.

Typical of this school is the fairly close connection with developments in other countries, mainly by travel and meetings abroad. This has had a great impact on the direction of the innovations. In addition, official links are established with the Royal Danish School of Educational Studies (DSE) in Copenhagen which also has its own research section.

A particular project is therefore initiated by the management group, approved by the teachers, discussed thoroughly in

subject groups over a long period and sent to the Ministry for approval. The Ministry usually gives its approval and is also generous with funding for innovative projects.

In most projects during this process half of the teachers are actively involved while the rest passively give their support. A few may withdraw from discussions but in most instances team work is the standard pattern. Openness and frank discussion in a friendly atmosphere is a typical aspect of the innovative climate in the school.

Evaluation of projects is seldom done in a formal and restricted sense. Most of the projects have been "successfully implemented" and usually the teachers, along with the management group, evaluate the success or failure of the projects. A few projects have not been carried through but none of these is vital for the implementation of the main objectives of the school. There are links with the research institute in the DSE but they have not been utilised to any extent.

The question of the success or failure of this particular school has to be looked at in a much broader perspective than project success or project failure since the school as an institution is set up to prepare for the development of the nine-year comprehensive school. The question should therefore be whether the school has been able to prepare a basis for the nine-year comprehensive school in Denmark, and if it has been able to disseminate its results so that they may be used in other parts of Denmark.

No formal evaluation of this sort has been done. However, dissemination of results has been encouraged, and teachers have participated regularly in in-service training courses for other teachers, giving lectures and disseminating material. Furthermore, a number of contacts throughout the country have been made by the management group as well as by individual teachers.

The outstanding feature of this school is the on-going team work with more or less all teachers involved in planning, development, "evaluation" and dissemination. This team work penetrates the whole atmosphere of the school and is probably the one factor which explains the success of the school in improving its own practice on a continuing basis.

COUNTESTHORPE COLLEGE

Countesthorpe College is one of the innovative secondary schools in Leicestershire(107). The Director of Education in Leicestershire initiated a number of innovations during the 1950s and 1960s and in the late 1960s planning work on an entirely new secondary school was started. The Leicestershire plan, as described in the case study of the Leicestershire region(108) gives the background for the establishment of Countesthorpe College, which was intended to incorporate many of the "comprehensive" ideas of secondary education in one single project. The Countesthorpe College can therefore be said to have been established in an administrative context which encouraged innovation, in an education authority whose director had been personally responsible for major educational reforms.

Countesthorpe College is situated in a settlement area eight miles south of the City centre of Leicester, with small-scale industry and with a population employed mostly in nearby Leicester. It includes a City centre clearance estate. The population is not unique in any social or economic sense and is representative of the population as a whole.

The Director of Education wanted to build a school which could involve teachers and students in an entirely new relationship, using individualised learning and group processes as main instruments in the reform of the secondary school. This type of change had been taking place in the primary schools in England for a long time: greater variety of instructional methods, flexibility, stronger emphasis on individual learning, and more instruction based on small groups. Also, inter-disciplinary work had been encouraged and the fixed timetable had been substantially modified. The Director felt that these kinds of changes could be introduced also in the secondary school.

OBJECTIVES

The original objectives held by the Director were reflected in the planning of the building and the appointment of the headmaster. He felt that Countesthorpe should be a prototype of the kind of school necessary for children who will be adults in the year 2000. He says that he does not want to take sides, but he does:

"believe in this general kind of trend..... I mean I do believe that individual learning is a better thing than class learning."(109)

The headmaster, who was appointed from a large number of applicants, shared the general opinions about the need for reform of the secondary school. He went even further in his plans for a total renewal of the teaching-learning process in the secondary school. In particular he was interested in a democratisation of the decision making process as well as innovations in teaching and learning. In general, the headmaster favours a position in which the policy of the school is decided by the staff as a whole and in which students have as much say as possible in their own affairs.

The objectives were operationalised with the help of the staff into different skills like communication skills, skills related to music, craft and physical skills, creative and expressive actions, not only in the traditional crafts field but also in applied science and in the field of athletics and sport.

TYPE OF INNOVATIONS

The school started in 1970 and so most innovations are still beginning and rapidly evolving.(110) Three main learning situations have developed.

1. Situations in which students work by themselves using different forms of aids;
2. Small groups of students working together;
3. Seminar groups working with teachers, perhaps up to 15 children, and occasionally large teaching groups for films or lectures.

In general, this kind of learning organisation depends heavily on self-instructional learning materials and on the production of specially designed group work material.

In addition to new methods there has been a move towards more inter-disciplinary work in an attempt to present knowledge in a more meaningful way. There are four reasonably conventional subjects like mathematics, science, languages and physical education. In addition there are three inter-disciplinary areas:

1) creative and expressive words,
2) creative and expressive two-dimensional and three-dimensional Arts and Crafts, and
3) the study of the individual and the group (replacing conventional history, geography and social studies).

In addition to serving the traditional youth group in secondary schools, the college also organises adult courses in the evening classes, and also during the day. In both cases students from the school work with the adults, thus utilising the facilities from early morning to late evening.

Besides these kinds of innovation, however, the staff democracy of the school is in itself an important innovation, in that the traditional role of the headmaster is radically changed towards a non-directive role and where teachers in staff meetings and special groups plan and manage their school.(111)

The teacher-student relationship has undergone total revolution. The relationship is very open and gives the students an atmosphere in which they can express their feelings - positive or negative - about teachers and their learning experience. As to be expected, teachers disagree somewhat about the impact of these changes and at least some elements of the community expressed mixed feelings. The case study(112) gives an interesting evaluation so far of both teachers' and students' initial reactions to the different types of innovation and, in particular, an analysis of student and teacher attitudes toward the "progressive teacher-pupil relationship".

The local authority has very little influence over the actual operation of a school when it is first established. By careful choice of the teachers initially by the headmaster and later by Staff Committees, the school has a staff highly motivated towards innovation.

The English headmaster has a strong position and can more or less determine the curriculum, the practice in the school and the appointment of staff. In Countesthorpe, the headmaster has given away his authority to a total staff meeting, including non-professional staff, which meets weekly to decide on overall policy for the school. It is responsible for the policy making, and the headmaster (who likes to be called the "Warden") looks upon himself as the chief executive of this policy board. The full meeting has delegated the power to decide minor policy to four standing committees. Executive action to implement policy is taken by a normal hierarchy responsible to the full meeting.

Development work is done largely by the teachers in a team. Most teachers feel that the production of material for individualised learning situations is interesting but exhausting. Adoption and adaptation of material from outside sources is encouraged wherever possible.

Evaluation in a formal sense is not done in the school. However, the whole process of interaction between students and staff gives an excellent opportunity for informal evaluation of the process. This is done extensively and the weekly staff meeting makes an important contribution to this.

The school is widely discussed in England; the headmaster as well as the teachers are invited to make public speeches and have appeared on television. This is not so much a matter of disseminating products as of disseminating ideas and attitudes.

THORNLEA SECONDARY SCHOOL, ONTARIO

Thornlea School is situated in the York County of the Province of Ontario(113) which for some years has been known for innovative practices, partly due to a forward-looking Director of Education supported by the Board of Education and a liberal community climate.

Originally, the idea of creating Thornlea School came from the Director of Education in 1966. At that time he was Superintendent of a High School Board in a part of the York County before the County was formed. The idea was to build a so-called "resource-centred" school which could serve multiple purposes within a flexible organisation. When the idea was launched teachers from the County were brought together to talk more specifically about the idea, examine innovations and come up with proposals outlining possible objectives and structures for the school. Seven teachers were selected representing various subject areas, primarily on the basis of their expressed interest. A Thornlea Study Committee was formed with the purpose of investigating similar educational innovations in other countries and to make recommendations about the organisational and curricular aspects of the new Thornlea Secondary School.

A report was completed in August 1967 and widespread discussion took place about the proposal. In December of the same year the Principal of the new school was appointed and in June 1968 the staff was hired and the school building completed.

Thornlea is situated in a fairly densely populated area of York County, a middle class suburb north of the city of Toronto. Students at the school generally come from the school's normal catchment area but any student is allowed to come to Thornlea from other parts of the County if he provides his own transport

(although only about 10 per cent of the students actually come from outside the catchment area). The school population seems to reflect a strong economic, cultural and life style split between the few remaining rural and working-class families in the area and the ever increasing number of middle class families.

OBJECTIVES

Thornlea was originally designed as a resource-centred school. Gradually, however, the objectives expanded beyond this into the social and philosophical area. The Thornlea Study Committee gave the following four general objectives for the students in the school(114):

"1. to learn;
2. to prepare for and to live with change;
3. to recognise, to value, and to honour the spiritual, cultural and moral heritage of Canada and the world;
4. to develop himself as a human person."

These general objectives were supplemented by behavioural objectives and operational procedures. Even these objectives were of a rather general nature, however, and a publication from the Thornlea Goals Committee composed of the staff was also rather vague(115):

"1. interested in learning for its own sake;
2. aware of themselves and sensitive of others;
3. capable of developing their potential talents;
4. demonstrate skill in thinking critically and judging soundly;
5. demonstrate the skills required to pursue self-directed learning."

At this general level there seems to have been substantial agreement among administrators, teachers, parents and students about the objectives with emphasis on flexibility, freedom to innovate and opportunity for creativity and self-directed learning. After three years of experiments, however, there is a significant number of staff, parents and students who are questioning whether permissive conditions have led to creativity and self-directed learning, and more particularly, whether this has led to what they perceive to be the crux of education - basic academic skills and knowledge in terms of preparation for further studies and the job market. An equally significant number of staff, parents and

students, who understood self-directed learning to mean the same as self-actualisation, according to the needs and interests of the individual, do not emphasize the learning of academic materials per se. In short, despite agreement about general objectives there is a controversy over the operational interpretations and concrete means of attaining the broad goals.

TYPE OF INNOVATIONS

Having analysed the general objectives of the school, the case study describes innovations in four areas: (1) organisation for learning, (2) curricular practices, (3) technological practices and (4) social organisation. Examples of these innovations are: the trimester system which allows the school to offer a much greater variety of courses (three times as many as most secondary schools in Ontario); the home group system which is designed to facilitate development of a sense of community within the student body, partly counteracting the effects of individual timetabling and other individualistic emphases in the school; pupil autonomy, an important element in the school, which gives pupils a high level of freedom in course selection, and a high degree of participation in defining the types and content of courses offered; independent learning courses which give the student the chance to define his own programmes within specific courses. A modification of this is the individual progress course which allows each student or group of students the possibility of following a course at their own pace; differential progress course which allows each student or group of students the possibility of following a course at their own pace; differential course phases is the system by which subjects are offered at different phases or levels of difficulty. Team teaching is practised by some of the teachers; apprenticeship teaching is the system by which senior students give courses to fellow students.

Inter-disciplinary courses are given at the school; courses aiming at better integration between school programmes and community are also an important aspect, and various technological aids - including computer facilities and closed circuit television - are being used.

THE PROCESS OF INNOVATION

The Principal of the school sees his own role as a facilitator rather than as an initiator of innovation. He maintains a "low profile" in the school and he seldom uses his authority vis-à-vis individual teachers or groups of teachers. He defines part of his role as a "buffer" between the school and forces outside the school. This is usually appreciated by the teachers, but has the incidental effect that most information from the school, and to the school, goes through one single person.

The staff is selected by the Principal and the local Superintendent and they have deliberately hired a range of teachers with radical, liberal and conservative educational philosophies. The Principal sees this heterogeneity as an important element of his innovation strategy. Within the school he has tried to create conditions which allow and encourage teachers and students to make their own decisions about the school programme. In this sense he has played a relatively passive role in actual decision making while attempting to be a mediator between factions.

The formal organisational structure is headed by a Principal and three Directors, a Director of student services, a Director of administrative services, and a Director of instructional services. The system is a relatively diffused non-hierarchical structure and the Principal and Directors form a management team that co-operates continuously.

Thornlea also has an Advisory Council based on voluntary attendance where parents, students and teachers can meet and discuss school policy. The Council has tended to be a forum for discussion rather than a policy making body. In addition, there is an Instructional Policy Committee which is the advisory board of the Director of Instructional Services. This is looked upon as an important body where students also participate.

The Director of Instructional Services is one of the main sources of information about innovations outside the school. He is also knowledgeable about current theory and new ideas in education. A major aspect of his role is to introduce new ideas into the school and get relevant people involved in innovative activities. He also helps teachers to evaluate and restructure their programmes.

The initiative for new innovations has come from different sources: from the Thornlea Study report issued before the school

was established; through the Instructional Policy Committee, the Thornlea Advisory Council and through more informal meetings. Seldom is there a single creator; the ideas rather develop from an interaction among individuals.

Very often both students and teachers form small groups who initiate and develop a particular idea and win the critical support needed to establish a new programme. This is the pattern in most innovations created to date in the school. Curricular changes, however, are usually considered in a general discussion since they tend to affect the whole school.

An important element in the process in Thornlea is the openness among staff and between staff and students. Some think that it was better in the first years when the staff was smaller and when the excitement of new experiments was higher.

Due to the heterogeneity of the staff, there tends to be some lack of communication between the conventional and radical groups. Even if the lack of communication among staff is sometimes perceived as a serious problem, the staff at Thornlea have shown a willingness to self-reflection that is unusual and there are signs of a dialogue beginning between opposing groups. Furthermore, despite the barriers of communication, teachers at Thornlea know more about other staff members and what they are doing than is the case in most other secondary schools in Ontario.

Evaluation of the innovations is not done in a strict sense in most of the projects. In some projects there have been research studies carried out by outside institutions largely because Thornlea has attracted much interest in Ontario as an experimental school. Studies are conducted, for example, by OISE - in particular through the Organisational Development Project(116).

Major innovations are evaluated at least in a subjective way, mostly by the teacher who is responsible for the innovation. In the last year there has been more concern about evaluation perhaps because some of the parents have begun to feel that academic achievement is one of the most important objectives of the school. A more general concern about evaluation is now evident and it is related more systematically to the objectives of the school. In general, however, most of the evaluation is done through discussion and criticism by the staff and the students.

There is no formal dissemination of the innovations to other schools. As noted above, however, the Principal plays a key role in this process, and a great deal of information about the school is widespread at least in the Province of Ontario.

SUMMARY ANALYSIS OF INNOVATIVE SCHOOLS

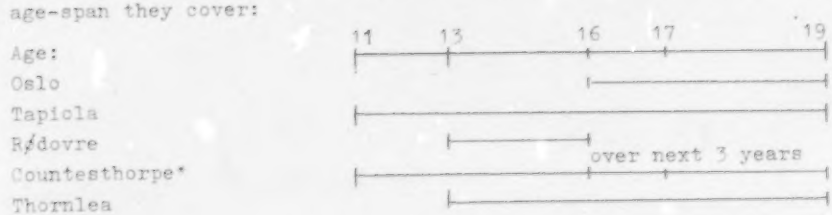
CONTEXT

The Thornlea and Tapiola schools are situated in middle class or upper-middle class environments. Oslo Experimental Gymnas recruits students from the whole city of Oslo but with some over-representation of students with parents from an academic background. Countesthorpe and Rødovre recruit students with parents representative of the population as a whole.

Thornlea, Tapiola and Countesthorpe were all created in local environments favourable to innovation. Rødovre was created by State initiative, with substantial popular support. Oslo Experimental Gymnas was created in a conflict situation with strong positive and negative feelings towards it. All schools, except Oslo, receive adequate resources and the buildings are usually better equipped than traditional schools: Oslo has very limited physical resources. Tapiola was created by a local group, Thornlea and Countesthorpe by the regional authority and Rødovre by the State. Oslo Experimental Gymnas was created by a group of frustrated students from different parts of Oslo.

All schools are administratively subordinate to the regional educational administration (except Rødovre which is directly responsible to the State Board of Education). All the schools are externally governed and bound by the same regulations (e.g. examinations) as other schools. They differ considerably, however, with respect to their autonomy, particularly in the area of the curriculum, where Countesthorpe and Thornlea have great freedom, Rødovre some freedom, and Tapiola and Oslo Experimental Gymnas very little freedom to innovate without detailed approval by the State (see below). In all cases, except Oslo, the schools receive additional payment for innovative projects from their funding sources.

The schools are all secondary schools but they differ in the age-span they cover:



* Will shed the 11-14 age group after four years.

OBJECTIVES

The creators of the schools stipulated certain objectives for their development. Generally speaking, there were two different intentions:

1) to create a school for the future, mainly a resource-centred school, using new technology, individualised learning, flexible methods and modern facilities. Countesthorpe, Thornlea, Tapiola and Rødovre fall into this category.

2) to create an "anti-school" - a school where the student-teacher relationship and decision-making process were to be changed primarily and thereby to create a school where all types of innovations could flourish. This was definitely the case of the Oslo Experimental Gymnas, very much a part of Countesthorpe and to a lesser extent of Thornlea.

TYPE OF INNOVATION

The innovations going on in the schools are mostly innovations in our category 4 (curriculum) though they include also innovations in organisation and administration (category 2) and in new roles and role relationships (category 3). Some innovations which we have called innovations in "school-community relations", could have been innovations in our category 1 (objectives and functions). In all cases, however, they are treated as new approaches in curriculum. The following diagram presents a summary for the purpose of comparing the activities in the schools.

As can be seen, priorities in innovation differ considerably from school to school. One area, however, is typical of all schools, i.e. individualised instruction. This, however, has different meanings from school to school. In Countesthorpe and Thornlea it is understood as a radical departure from traditional instruction, the teacher playing a very different role; Rødovre also is moving in this direction but the teacher's role is still very much the same as previously (in his relationship to his students). Tapiola seems to favour independent study but with teachers retaining more or less their traditional role.

The term "individualised instruction" has quite different meanings ranging from a concept of giving every individual student

Type of Innovation	Oslo	Countesthorpe	Thornlea	Rødovre	Tapiola
1. New decision making (cat.2)	Main	Main	Some		
2. Teacher-student relationship (cat.3)	Main	Main	Some		
3. Individualised instruction (cat.4)	Some	Main	One main area	One main area	Some
4. Flexible group (cat.4)	Some	One main area	One main area	One main area	Some
5. School-community relations (cat.4)		Some	Some	Some	
6. Subject-based innovation (cat.4)		Some	Some	One main area	Main area

a special curriculum to follow at his own speed and in his own mode of learning, to a concept where only the speed of learning is "individualised" but where all students follow the same curriculum.

The more radical projects seem, so far, to face major problems. Practical problems like timetabling, production of material, service, and control of progress are day-to-day concerns.

> "Over half the teachers (55 per cent) at Countesthorpe are dissatisfed with the operation of individualised learning at the school. Significantly the evidence suggests that it is the older, more experienced teachers who are less satisfied in this respect than the young teachers, and that male teachers are less satisfied than female teachers. Sources of

dissatisfaction fall into two categories: doubts about the ability of and opportunity for the teachers to prepare adequate material, and doubts about the effectiveness of the material prepared, particularly in its usefulness to motivate the children. Over and over again the staff give indications that there are problems of preparing the work sheets so vital for individualised learning."(117)

More fundamental problems are probably reactions from parents (e.g. Countesthorpe) who favour more conventional teaching which is easier to control and where results are more easily identified.

"Many parents have already expressed their anxieties that the school might not meet their expectations with respect to both instruction in subjects and social advancement."(118)

In few cases, except in Countesthorpe and Malmö(119), has an analysis been made of individualised instruction as it relates to the total range of school objectives. Is it possible, for example, at the same time to stimulate individual differences and reach an objective like "educational equality"? Bernbaum makes the following comments:

"There is a real possibility therefore, that through parental difference in social class the main focus for experiment and innovation in the long run may be the non-achieving working-class pupils."(120)

We believe that a school system with a tradition of uniformity (both regarding teachers and students) needs incentives in the direction of individualised instruction. But there is a need for a careful analysis of what one understands by the term, and how it relates to other objectives. This is seldom done. The argument of some parents (40 per cent) in Tapiola School illustrates one important dimension:

"Similarly, the staff objective of extensive freedom of choice by the pupils aroused the parents' hostility. Such choice was believed not to be in the best interests of the children, who, the parents argued, need planned guidance." (121)

The role of leadership and participation in decision-making will be discussed further in Chapter VI.

SCHOOL MANAGEMENT

	Role of Headmaster	School Management	Role of Management	Final Responsible Body
Oslo	Little power, subordinate to General Assembly	The Council (headmaster, 3 teachers, 3 students, 1 parent)	Advisory to General Assembly	General Assembly (all students and teachers)
Tapiola	Traditional role	Headmaster Informal use of teacher council	Teacher council advisory to head-master	headmaster
Rødovre	Traditional role shared by two assistants	Management team (principal and assis-tants) and informal use of staff meetings	Advisory to head-master	Headmaster
Countes-thorpe	Radical change - Chief Executive	Staff meet-ing (volun-tary parti-cipation of students*)	Advisory but in reality decision making body	In reality staff meeting, for-mally headmaster
Thornlea	Non-directive	Management team and advisory bodies	Advisory but in reality decision making body	Principal - in reality shared with Management Team

In this context it is to be noted that there are differences in the involvement of students and parents in the management of the school. The students are very much part of the management in Oslo experimental Gymnas. Also in Countesthorpe and Thornlea students are to some degree involved in the management though they

* See footnote 110

play a somewhat more "advisory" function. In Rødovre the students are younger than in the other schools, and the situation is therefore probably not quite comparable. In Tapiola there is little student involvement in the management of the school (1971).

Parents play a small role in the management of the schools. They are, however, in different ways influencing school policy. Their function will be discussed in the next chapter.

PROCESS OF INNOVATION

The initiation of innovative projects inside the schools is essentially similar in Tapiola and Rødovre. In these cases the headmaster plays an important role, while working closely with the whole staff and groups of the staff. In Thornlea the Instructional Policy Committee is particularly influential, together with staff meetings, informal groups and special task forces. In Oslo and partly in Countesthorpe initiative comes mainly from informal groups of students and teachers and the General Assembly sets up ad hoc working parties for planning.

Openness seems to be a key factor in the innovative process in all schools. Openness means, in this framework, openness towards the outside world and openness towards discussion and criticism inside the school. In one way or another, all the schools have created regular contacts with the outside world - Thornlea, Rødovre and Countesthorpe through their national and international contacts; in Tapiola, also, through regular travel and contact with outside sources; and in Rødovre and Countesthorpe through the use of material from outside. Oslo has the least contact with the outside world, but is influenced by individual educators and school experiments in other countries.

Are the innovations invented by the schools - either by teachers, students, or heads? The answer depends on what one means by invention. If one defines it as something original which has never been thought of or done before, few if any, of the innovations were invented by the schools themselves.

Are the innovations only the adoption of experiences from other schools? If one means an automatic copying of ideas, practices or products, none of the innovations is of this kind. The innovations observed are not invented in the strict sense, nor are they adopted. They are developed by the school.

Bernbaum gives the following assessment of the situation at Countesthorpe(122):

"In many respects therefore, both in terms of the earlier experience of the staff and the widespread use of centrally produced pre-packaged material, many of the plans at Countesthorpe are made possible as the result of the innovation that has already happened in schools in the past few years. Nevertheless, since Countesthorpe takes these plans very much farther, and existing materials are not as yet sufficient for their operation, it is a vital part of the staff's task at Countesthorpe to produce new materials."

As all cases illustrate, no idea, practice or product is automatically applicable in the schools. Education is a process where an understanding of complex social interaction processes, human needs, administrative constraints and the readiness of the total "school culture" are essential before an innovation can even get started. One might say that real inventions in education start when an idea is transformed into educational practice.

We are here dealing with a crucial issue in the whole debate between the "grass roots approach" and the P-R-D-D approach. The last, as exemplified by the RBS strategy, favours the production of "ready-to-use" products. Individual differences (in pupils) are "taken care of" in the development of the teaching-learning system.

But is the idea of "user-proof" products viable in education? We believe - and we feel that our data from all the innovative school studies prove this point - that the readiness of the "school culture" (the readiness of the community, the managerial group, teachers and students) is more essential than the product, and that these conditions (at least so far) are not taken into account in the production of teaching-learning systems.

Does this mean that every innovation has to be developed in the schools? We believe that the data show that this approach raises other problems, and that the important lesson to draw is that both these approaches can be utilised, provided that they follow a careful analysis of objectives, types of innovation and the "school culture" (see Chapter VIII).

Evaluation is not done in any formal sense in the schools, except for some outside research projects which were not initiated in the schools themselves (Oslo and Thornlea). There is no systematic use of research or evaluation methods. All evaluation is done in a subjective and informal way.

Does this method of evaluation mean that evaluation is treated inadequately? In our opinion this depends on what the purpose of evaluation is.

1) Evaluation for the purpose of dissemination

If the purpose is to develop a product for general dissemination, one would ask for a sort of evaluation which would enable teachers and students who have not themselves been involved in the development work to use the product. One would probably define certain objectives which the product should meet under certain defined conditions (costs and adaptability)(123). This is the way a number of "teaching-learning systems" are developed and evaluated. We have raised questions with the assumptions underlying this approach.

2) Evaluation as a basis for learning

If the innovation primarily is developed for "internal use", other criteria would be appropriate for the evaluation process. The purpose would be to manage the process of development in such a way that everyone involved would learn from their successes and failures, so that they are able to improve their practices.

In some cases formal evaluation procedures may be necessary. It is certainly more important that more precise statements of objectives should be made in such a way that everyone concerned can identify when, where and how the process failed to develop according to intentions. This sort of evaluation also depends on interpersonal relationships, leadership and openness (see above).

Dissemination is not seen as an important part of the process. The schools have not established any systematic links with other schools. They are, however, well known in their own country, partly through the use of mass media and to some extent by dissemination of products (Tapiola).

One should not, however, underestimate the importance of staff promotions as a strategy for dissemination which in fact operate in all cases. Virtanen(124) comments on this point and stresses the importance of the mobility of well-known Tyk-teachers who often get appointments as headmasters in other schools.

We have argued that a number of interesting ideas, experiences and products are lost in the educational system, particularly in highly decentralised systems, due to the lack of efficient dissemination procedures.

All case studies from the regions and the schools illustrate that dissemination of innovations is not a central concern. If

one attempts to remedy this situation, however, it is by no means easy to find a satisfactory solution.

One way is to establish some sort of an "information bank". The assumption would be that schools need more information to innovate. This is probably true, but in most cases, as illustrated above, information, ideas or experiences are given through individuals. More important, therefore, than "information systems" alone are networks of experimental individuals (and perhaps a network of institutions).

The reason for this is probably that innovations in education require leadership of some kind (see Chapter VI). Leaders are not only "selling ideas", but are at the same time a guarantee of quality transferred to the "followers" by the trust which is a necessary factor.

If one observes the pattern of information-gathering in the innovative schools studies, in all cases (perhaps except for Oslo) a leader (usually the headmaster) has established a network of national and international contacts.

In all the school studies the "climate" in the school is looked upon as the most important factor in the process of innovation. It has been difficult to get a clear understanding of what this factor is. Later on we will discuss leadership and participation in decision making as important elements of "climate".

A problem solving capacity is probably in all cases an important element in the climate. This capacity has openness towards problems and people as a precondition. Olsen gives the following comment(125):

> "More positively the teachers welcome the co-operative context of the school which they believe is completely different from other Danish schools. Materials, once prepared, are made available to all - a technique developed for the teaching of Danish has been successfully employed by the Mathematics staff. Such co-operation is regarded as important in maintaining the enthusiasm of the staff. Certainly, it is an important counterbalance to the new context in which many teachers find themselves, with unusual conditions of service and salary, uncertainty over their authority and new work tasks."

Also in the other schools those qualities are stressed as essential. Hauge(126) describes the development of student management in the Oslo Experimental Gymnas in this way:

"The relationship between the Council and the General Assembly is developed through a process characterised by mutual trust."

The ability to operationalise ideas through active involvement of teachers and students is another element. In all schools problems are discussed and innovations are developed through active co-operation among teachers and in some cases between teachers and students (Oslo, Countesthorpe, and partly Rødovre and Thornlea).

More systematic planning is also mentioned as an important element in an innovative school, and as essential for the "climate" (Tapiola, Rødovre, Thornlea).

The innovative "climate" does not take consensus about objectives or means for granted. Conflicts, however, are regarded differently in the schools. Usually conflicts are resolved by negotiation, often with the head playing an important role (Tapiola, Rødovre). In other cases conflicts are left to open confrontation between interest groups, but consensus is looked upon as highly desirable (Oslo, Countesthorpe). In other cases where conflicts are not resolved, it is accepted that some teachers withdraw from a particular project and allow other teachers to go on with their activities (Thornlea). Important in all schools, however, is an openness regarding discussions of objectives and means. Conflicts are not looked upon primarly as threats but as a natural element in innovative practices.

RELATIVE FREEDOM TO INNOVATE VERSUS TYPE OF INNOVATION

There is no clear relationship between the freedom which each school has to innovate and the type of innovation which goes on in the school and which they define as their task. All schools, however, are restricted either by external constraints (regulations or examinations), by financial constraints or by internal constraints (philosphy or group climate). The schools are therefore not comparable in the sense of developing the same innovations but rather in the sense of seeking new solutions to problems in spite of external or internal constraints.

The community expectations are probably one of the most important constraints upon the schools. Tapiola, Thornlea and Countesthorpe are either created by the community or closely attached to it. There are signs that the community, after having stimulated innovations in educational technology, flexible groupings, etc., is now asking for "results", which very often means

traditional output measures. Rødovre, on the other hand, is more removed from the community and is also serving younger children going on to upper-secondary schools and not to universities. In the case of Oslo, both parents and students, from the beginning, were aware of the constraints of the examinations and decided voluntarily to create a situation which could possibly have a negative effect on results in traditional academic terms.

The socio-economic background of the students has not been analysed carefully. We have observed that in the case of Thornlea and Tapiola, schools in a typical middle-class environment, parents originally were positive towards innovations, but have later on become concerned about academic standards. At Countesthorpe with a socio-economic environment representative for the population as a whole, it is the middle-class parents who have been most concerned with academic success.

We cannot, of course, indicate that this is a typical reaction from parents regardless of social class. We do not know, for example, which parents in each school have expressed their views. The studies do not give a detailed enough picture on this point.

However, this raises the problem of a school's freedom to innovate. We find that the schools do not differ significantly in this respect. One would be inclined to suggest the hypothesis that the fewer the "external" administrative constraints, the more relative freedom a school would have. This cannot be read from the case studies, and in any case we believe that it is open to question.

This hypothesis depends on the degree of autonomy of the administrative constraints. Are they only administrative "obstacles" or regulations that are real reflections of norms of society? External examinations can be taken as an example of this problem.

External examinations are often looked upon as one of the major barriers in innovation in education. If it is true that examinations merely represent an unnecessary mechanism of control imposed upon the school, a new form of evaluation would be a strong instrument to facilitate innovations.

In all cases the teachers in the schools consider external examinations as mere barriers to innovation: Hauge(127) comments:

> "The examen artium is often brought out by the members of the Experimental Gymnasium as a factor that is an obstacle to a realisation of the school's goals. The examination-oriented

activities are given priority at the cost of the other values which the school wishes to promote. The information organ, "On School Democracy", claims that the form which the examen artium has is a major stumbling block for an actual democratising of the school (2, p.3). But it is true for the Experimental Gymnasium, as it is for other gymnasiums, that the examination form exerts a directly inhibiting influence on the development in the school (2, p.10). It is apparent that this opinion is very widespread at the Experimental Gymnasium."

If examinations, however, represent more than a procedure, if they are a reflection of expectations in society, a description of the way one wants to see the schools behave, they are more than just "barriers" to be overcome. If one tries, the examinations may disappear; the expectations, however, will not. They will appear at some time in another form, for example through parents' expectations, demanding academic results.

Schools have never been "free" in the sense of having freedom to determine their own function. Most schools have some freedom to determine their practices as long as these are not inconsistent with the function of the school.

Administrative regulations, in centralised or in decentralised systems, are sometimes relics of an educational system which is no longer functional. But it is a misunderstanding to think that a decrease in administrative "constraints" necessarily increases the school's capacity to innovate. A careful analsis of the function which each regulation plays in relation to expectations in society is necessary if one wants to give the individual school more freedom. Unless this is done before "constraints" are removed the expectations may well materialise eventually in a form which is more problematic for the school than former constraints. This argument does not mean of course that innovations in the field of evaluation are not necessary and desirable, but rather that the situation is far more complicated than usually admitted.

Examinations have been used deliberately as a instrument in the process of innovation. The work of the Schools Council, NCIE and NBE illustrates both the difficulties and the possibilities. Innovations in examinations have probably more immediate and direct influence on the school's work than any other innovations in curriculum. Since innovations in examinations always have to be defined very precisely because they determine the output of the learning process, it is difficult to get agreement on major changes.

To some extent examinations clarify the value conflicts involved in curriculum and bring these value conflicts out into the open. There is a great deal of vested interest in the curriculum and those interests emerge clearly in open discussions about innovations in examinations. One would assume from the case studies that one of the major strategies for innovations in curriculum would be a deliberate attempt to clarify the value conflicts and contradictory goals in curriculum by using analysis of examinations as the major strategy.

The implications of these considerations raise considerable doubt about the concept of autonomy of the school in the process of policy formation and even policy adoption, even in the field of curriculum (our category 4). We see, however, an important function for the individual school in the development of innovations and also in the implementation process. But in neither of these cases is the school autonomous. The functions of the school, related to different types of innovation and different stages in the process, will be analysed in a broader context in Chapter VIII.

Chapter VI

THE INDIVIDUAL AND THE PROCESS OF INNOVATION

"The ability on a continuous basis to improve practices" was a working definition of an innovative school (see Chapter I). These "practices" have direct impact on the working life of a large part of those belonging to the system (not only teachers and administrators, but also students). The perspective in this chapter is to look at educational innovation from the individual's point of view, inside or outside the educational system. To what extent can he influence, participate in and learn from the process of educational innovation? What is the effect if individuals and groups of individuals outside the "establishment" (managerial group and professional groups) participate in the process?

In our opinion educational innovation is no longer a supplementary activity reserved for particular interest groups (such as researchers, administrators or teachers), or piecemeal activities once in a while, but rather a continuous renewal process which penetrates the whole educational system and which, of course, reflects changes in the entire social system and in its turn has repercussions on it.

If this is so - and we believe that the educational systems studied are moving in this direction - educational innovation is no longer an activity reserved for the few (and imposed upon the many), but an activity which affects everyone inside the system, as well as individuals outside the system (the parents, the taxpayer, the "silent majority", etc.).

In this chapter we will be concerned with the participation of individuals inside the system, e.g. teachers, students and parents. We submit that the process of innovation is an important opportunity for learning, possibly the most important opportunity for learning in the educational system. We will consider how far the process presents the individual with a real learning situation, and to what extent individual needs and potentials are taken into account.

If teachers, students and parents (representing interest groups in the community) were to participate in decision making (policy formulation and adoption) and in development work, what effect would this have on the direction of innovation and the process of innovation? (task No. 3, Chapter II, page 56). The participation of individual teachers, students and parents, the so-called "grass roots" level, is an objective of recent reform efforts in several countries. Sometimes participation of these individuals (and groups of individuals) has been proposed as an "anti-technocratic" or "anti-bureaucratic" instrument. In this chapter we are concerned with the possible effects such participation may have, in relation to our four categories of innovation.

Individual roles in an organisation are regulated by written and unwritten codes. Thus, the role of a teacher is affected by expectations, incentives and recruitment and promotion patterns. The effects of different policies in this area on the process of innovation have been a matter of special interest (task No. 4, Chapter II, page 56).

As we have already mentioned, key individuals - frustrated but creative students in one case, or a skilful Director of Education in another - have played significant roles in the creation, development and implementation of innovations. We have called this function a leadership function, and we shall consider how far the success of certain innovations can be traced to this function, and if possible analyse the effects of different styles of leadership (task No. 4, Chapter II, page 56).

PARTICIPATION IN THE PROCESS OF INNOVATION

From the early 1950s when university teachers expressed dissatisfaction with the curriculum in schools (particularly in the U.S.A.) and started a whole series of curriculum development projects, the question of teacher participation in developments has been acute. A number of studies points out that the effect of these developments has been that the changes are more a superficial reshuffling of priorities and activities than real change(128).

One probable reason for this is that there was little understanding initially of the teacher's contribution to the process. The initiative for innovations came primarily from sources outside the school and in many cases new material was imposed upon schools with little attention to the uniqueness of the school organisation

or to the social and psychological problems involved in change.

The case studies show quite clearly that this trend has changed over the last few years. In fact, teacher participation is now taken for granted in almost all the countries studied and we shall see how this problem is tackled and how it influences the direction and the process of innovation. In the Schools Council's objectives it is said quite clearly that each school shall have

> "the fullest possible measure of responsibility for its own work, with its own curriculum and teaching methods based on the needs of its own pupils and evolved by its own staff....."(129)

As previously stated the involvement of teachers in decision-making is stronger in England than in any of the other countries studied. Recently, this power of the teachers has been defended by Geoffrey Caston, one of the former Joint Secretaries of the Schools Council. In a speech he refers to three "enemies" of freedom: first, the letha ic; second, the complacent; and third(130):

> "The dirigistes or the technocrats. They have worked out just what the needs of the nation are in trained manpower for 1988, and they know that ..... research has proved that you can teach an infant Boolean algebra by the time he is three years old..... The most important thing for them is to set a few really clever people to work compiling programmes and work cards that cannot be fouled up by the teachers who operate them. Even if they do not go to that extreme the one thing they cannot stand is chaos. So let things be arranged so that somebody can sit at the centre and make quite sure that everybody in education does what is best.
>
> Education is power over individuals and no one is worthy of enough trust to be given that kind of overall responsibility, and find ways of providing for all of us alternative means of responding to change. From these we can choose the one that will suit our own personal style and serve the interests of the pupils who are in our care".

The consequence of this seems to be that power should be distributed to as many professional staff as possible. It does not imply that power should be given to non-professionals or to other interest groups concerned with educational development but that power should be concentrated on those who have a professional interest, namely, the teachers. This view-point is reflected in the

organisation of the Schools Council and in the strategies used in innovation. It is more clearly stated by another former Joint Secretary of the Schools Council(131):

> "The new idea which teachers think is peddled by the theorist or enthusiastic devotee for his own seemingly unintelligible ends meets with coolness, suspicion and sometimes hostility. That which teachers make their own, on the other hand, quickly puts out strong roots and equally quickly flourishes in a variety of ways which go well beyond their originators' conception.
>
> .....To promote a sense of relevance..... amongst serving teachers requires:
>
> - that any experimental work should be carried out with regular teachers in ordinary teachers' centres; otherwise credibility is lost;
> - that experiment should start where the teachers now are in their thinking rather than where we might hope that they should be;
> - that no major claim is made for any experiment ahead of time; the modest small scale idea which is limited in the duration of the work required is more likely to attract support from the teachers than what is large, nebulous and timeless".

This statement goes all the way to meet the teachers on their own ground, to give them full responsibility for classroom decisions and to go along without pressure in the direction teachers want to go.

The same situation - although not so clearly expressed - emerges in the studies in Ontario, particularly in the study of the York County. In this case also, the decentralisation of decision-making has the effect of giving more power to the professionals - the local professionals. To understand the creation of the curriculum committees in York one should note that the major concern was to foster professionalisation among teachers. In the process of developing professionalisation teachers have gained power and control of curriculum development and thus have been able to take important decisions about the direction and the scope of changes in York. They are represented in a variety of committees and are therefore responsible for every aspect including evaluation of innovations which they themselves initiated(132). There are signs, however, in Ontario that the plans for teacher involvement have not produced the desired effects. In fact, in the study of the curriculum

committees it has become clear that a large number of teachers has not understood the intent, or for other reasons has not participated effectively in the work of the committees. Consequently, since development has been rather slow, some administrators feel that the teachers have not responded positively enough to warrant placing any high expectations upon the committees' success.

Similarly the study of the Wetzlar region shows that teachers are the main group involved in the planning of educational reforms. Teachers generally take part in the commissions as well as in the specialised subject groups which are set up to develop the new curriculum in detail. The reason for involving the teachers is explained in the case study of the Wetzlar region(173):

> "From the outset a large number of teachers participated in the work of developing the new curriculum. In addition to preparing the means of achieving tuitional objectives, they also studied the results of curriculum research in order to plan their part in practical implementation of the new plans on a large scale. This dual function retarded the development of the new plans but appeared necessary because experience had shown that the mere implementation of new educational plans through administrative regulations did not in practice lead to the desired success. That is why an 'open method' of curriculum innovation was chosen".

The involvement of teachers, therefore, was mainly a strategy by which it was hoped to get the ideas implemented "from above" into the classrooms. It is too early to establish generalisations about whether this strategy is working, although examples from countries that have attempted this (e.g. Norway, Sweden) are not altogether successful.

In development work in Malmö considerable responsibility was given to individual teachers for the development of innovations. It was believed that real innovations could come only from a substantial involvement of teachers. The Board of Education in Malmö therefore has delegated specific duties to subject planning groups consisting of more than 200 teachers and head teachers. One of the functions of these groups is to draft proposals for experimental innovations. The groups perform a liaison function between the teaching profession and the Board of Education.

Similar trends can be found in the Rödovre School which is a typical experimental school with highly motivated teachers. In this school some attempts have been made in order to involve people

other than teachers in development work (parents) but with very little success. Also, in the Tapiola School - a typical professional-oriented school - teachers in subject groups carry the main responsibility (apart from the headmaster) for the developments. In the case of the Oslo Experimental Gymnas and the Countesthorpe College, participation in decision-making is more a question of sharing responsibility with students and parents than of increased professional power.

In all regions decision-making about innovations is heavily dependent on the teaching profession, although in the case of Leicestershire and Devonshire they play a secondary role after regional politics have had their effect. This is true also for the Wetzlar region. In these three cases, however, we have been concerned mainly with the comprehensive school proposals which in all cases, both national and regional, are treated as political problems, particularly since questions of school structure are closely related to those of equality of educational opportunity. In York and Malmö teachers play a significant role in all stages of the process, sharing responsibility in Malmö with the administrators and the researchers, and in York with the County Administration. In the central institutions we have seen that the Schools Council policy is based on teacher participation. This is partly true also for OISE, particularly in their field work. In other areas of activity, however, the internal professional groups (Academic Council) seem to play the professional role in decision-making and have so far had a conservative influence on the work of the institution. In the other central institutions there is less teacher involvement.

The strategy of the RBS is probably the best example of the opposite approach to the Schools Council. In his case study, Ovsiew is saying(134):

> "But the new curriculum makers worked from a totally different assumption: that individual differences were within a standard range so that a curriculum could be built anywhere to suit all or part of that range. Which is to say that the differences among school districts were irrelevant; only the differences among children mattered in curriculum construction. And if that were true, it was worth spending millions of dollars, using the finest scholars, and paying for research, field test and development to create curricula that could be used in thousands of school districts, rather than spend hundreds of dollars

using teachers to make curricula to be used in one school district".

This does not necessarily mean that teachers are mistrusted but only that other professionals are considered efficient for the job to be done. Also, of course, it reflects a specific interpretation of the role of research and development in education. In the practical work of RBS, teachers are involved far less than in other institutions. The staff of RBS is composed largely of scholars of different academic professions relevant to the development task.

In the NBE in Sweden the situation is somewhat different. As we have seen, when research work is narrowly defined there is little or no teacher involvement, either in planning or in development or dissemination of the work. In the development departments of NBE, however, a number of teachers are involved in subject groups along with other professional groups, though their tasks are clearly defined by the NBE. One interesting point, however, is that two thirds of the staff of NBE itself are practitioners themselves working in the NBE only for a few yesrs before returning to their jobs in schools. Although Sweden is an example of a highly centralised country it is clear that there is a substantial involvement of all professionals in planning, mainly because a teacher certificate is a prerequisite for promotion to an administrative post, such as school principal, direction of schools or consultant.

Also in the NCIE in Norway teachers have been involved to a large degree in the decision-making and development of innovations. A specific policy of giving incentives to teachers (see below) has, however, produced a side effect which is worthwhile noting in this connection. Since Norway uses teachers for all types of innovative work the teacher unions in recent years have been very much involved in negotiations about the level of funding for individual teachers in particular projects. In two cases teacher unions have declared a boycott since they could not agree to the payment suggested by the Ministry. There is a danger that the teacher unions, therefore, are using teacher participation as a control mechanism for innovation, though not as yet openly as a mechanism to stop certain innovations which are undesirable from the unions' point of view. (In fact the union has carefully tried to differentiate between working conditions on the one hand and type and objectives of the project on the other).

So far it is difficult to draw general conclusions on how innovation is affected by teacher participation. We have already

seen that the schools where there is teacher control of innovations have a tendency to concentrate on innovations in Category 4 (curriculum) which usually do not threaten the role and status of the teachers (as at present defined) and is far less loaded politically than problems of school structure and administration. Innovations in these schools are seldom concerned with radical changes in role relationships or role behaviour or in the management of the innovations, or with the structure of the school.

From the studies of the central institutions there seems to be a clear indication that the Schools Council in particular (and maybe NCIE), where teacher involvement is substantial, tend to concentrate on relatively traditional curriculum changes.

Many studies of innovation start with the assumption that greater involvement of teachers in innovations automatically produces better results and faster dissemination of these results. There is no evidence in the case studies to support this assumption. Also, "better" is obviously a matter of values and not a quality that can easily be defined. The fact that teachers play a part in the planning and development of innovations, especially in the curriculum field, does not necessarily mean that schools are better off, since the very fact that teachers have control may prevent the schools from doing things which would be more relevant, both in the short term and in the long term, than innovations in curriculum.

One must also guard against the simple assumption that participation is more "democratic". In most cases where localism is favoured it means control by local professional groups, particularly teachers. If other interest groups are neutralised by giving power to local professional groups, this may well be considered an undemocratic strategy, operating to conserve practices which others may wish to see change dramatically.

The case studies do not afford any insight into the effects of different dissemination strategies. It is probable, however, that the involvement of teachers in decision-making in innovations serves as a "sales strategy" towards the rest of the profession. By involving key individuals in the profession the "followers" will probably adjust more easily to new challenges. In addition, professionals have an important say in the allocation of resources to in-service training of teachers and in other measures which would help to secure efficient dissemination and implementation.

The case studies show clearly that the involvement of teachers in innovations is sometimes considered to be a key factor in the success of innovation. This does not mean, as we have argued above,

that it is a necessary and correct measure for all purposes - in particular, if the participation of the teacher profession means in practice the suppression of others, such as students or parents. Some reactions reported in the case studies show that teachers "fail" to involve parents in decision-making (e.g. Rødovre, Oslo, Tapiola, Countesthorpe). The reaction from the teachers is that parents are "really not interested". The same reaction is obvious in some cases where the administrators try to involve teachers in decision-making (e.g. York). In both cases it may not be a question of interest but of the possibility of influencing the decision-making process. Parents may feel that the professionals are running the school in any case and that their involvement is more a pretence than a reality. The same may be true in cases where teacher groups are not "interested" in the proposals from regional or central administrators.

The conclusion we can draw from one-sided teacher involvement in innovation is that it tends to influence both the direction and the process of innovation. Teachers are most interested in the curriculum, often (but not always - for example, Malmö) defined as a reform of content and methods in the teaching-learning process. Substantial teacher involvement has a tendency to professionalise and thereby monopolise innovation. This may be the main explanation why parents seldom take part in the process (in these cases).

There are very few examples in the case studies of active involvement of students in the process of innovation. The Oslo Experimental Gymnas(135), however, is an outstanding exception, where student involvement is the very basis of the school. Except for this case (described in some detail above) there are only occasionally projects with student involvement. It would be of interest here to examine what role is given to the students where they are involved.

POLICY FORMULATION AND ADOPTION

We find that in no case, except for Oslo, are the students engaged actively in the identification of needs, formulation of problems and creation of projects. In some cases, only (e.g. Countesthorpe, Thornlea, Rødovre) the students play an "advisory" role in relation to the managerial or professional group.

The creation of student bodies to represent student views on the development of the school, as well as "student representatives"

in regional and national committees is a trend in all the countries studied. In New Jersey(136) this has already had an impact, at least on the attitudes of students, teachers and parents. In Norway students for a long time have been represented on national education committees.

We believe, however, that these forms of representation do not mean that students are actively involved in policy formulation and adoption. Knowing that teachers in many cases feel that they have no say in policy formulation and adoption - and they have built up impressive organisations to represent their views - one should not be surprised that students have the same feeling.

An interesting observation of student reactions in a school which has not so far involved the students in decision-making, is reported in the case study of Tapiola School(137):

> "The pupils generally accept the aims and objectives of the teachers. It was very noticeable that those pupils who had experienced other secondary schools emphasized the great differences between Tyk and the other schools."
> "Amongst the older pupils the objectives claimed by the senior administrators of the school were treated in a somewhat derisory manner. As one argued, "Tyk is an experimental school only because the leading men in the school want to swell with pride in the company of their influential friends". Generally these pupils argued, in common with current radical student opinion, that the only objective of the whole Finnish school system is to produce manpower and to maintain and continue the existing Finnish society. As far as they were concerned Tyk differs from other Finnish schools only in that there are more machines and materials to help the pupils and teachers, and that the teachers may be a little more efficient than elsewhere. These senior students insisted, however, that this did not really alter the nature of the objectives held by those in authority. Any differences between Tyk and other parts of the Finnish educational system were, to them, quantitative rather than qualitative. They even claimed to be unimpressed by the reforms in pedagogy, claiming that these were only basic in two subjects - music and biology."

This feeling, we believe, is not exceptional, though there are considerable differences among the schools studied. Although a few students in the Oslo Experimental Gymnas express similar views, the large majority of students feel that the innovations concern them, that they can influence the process, and that the innovations have significance for them(138).

DEVELOPMENT AND IMPLEMENTATION

As we have seen above the actual development work is treated as a professional question, and to a large extent is delegated to teachers. Although students play a part since they usually are the "objects", they seldom play a significant role as partners in the development or implementation process (except in Oslo Experimental Gymnas).

Parents participate in different ways in the policy formulation and adoption process. The overall impression, however, is that parents are brought into the process by the managerial group to help adopt policies already initiated and decided by the managerial and the professional group.

Are parents interested in school policies, and what are they interested in? An investigation by Virtanen in the Tapiola School shows(139):

> "From the results it can be argued that about 50 per cent accepted the objectives set out by the senior members of the school, and slightly less than that proportion believed that the objectives had been striven for. The parents, however, did indicate that they had a different order of priorities from that of the leading teachers and administrators. Thus, the majority of parents suggested that more emphasis should be placed upon academic study with the objective of obtaining university entrance for their children."

In all cases, however, it has been difficult for the schools to involve parents in the formulation of school policy. The situation in Rødovre seems to be typical(140):

> "Teachers in the school frequently talk of "pupil-teacher-parent triangle", and discuss methods by which the relationships might be strengthened. They

point out that parents "support our efforts", and that "they will come when asked to". On the other hand, it is important to recognise that the dialogue between the school and the parents is characterized by the initiative coming from the school and the teachers. One teacher noted, "It is hardly possible for the parents to give a general criticism of the school. Their participation in the projects of the school is insignificant".

The Thornlea study concludes(141):

"Parents seem more utilitarian oriented (e.g. "how will my kid do in university, or a job?" etc.). This is interesting because the study on The Thornlea Community Looks at Objectives for its High School found that parents did not have this orientation to the school. There are at least two possible explanations. First, the earlier study was carried out in the school's first year of operation. Perhaps our interviews during its third year were at a time when parents are more concerned about these more practical questions. Some comments by parents did indicate this developmental occurrence. A second possibility is that we were more likely to uncover these responses in depth interviews than would be the case in the earlier questionnaire study which presented a list of general objectives from which parents could choose".

Similar reactions are reported by Hauge(142):

"it is claimed by several students that their parents have no understanding of the school's activities. A certain scepticism is expressed. It is said that their parents are mainly interested in the pupils passing their examen artium. In spite of the fact that approximately half of the pupils are satisfied with their parents' interest it may be said, with this, that several of the students have the impression that the school is in a position of opposition to their parents' interests."

As reported earlier parents have expressed similar views about Countesthorpe. It is interesting to note that those schools

with the most radical innovations in curriculum (Countesthorpe and Thornlea) and in new role relationships (Oslo and Countesthorpe) find parents expressing the need for "academic results", while the school with the most subject-oriented innovations (Tapiola) and the closest contact with the community has few dissatisfied parents. Virtanen reports(143):

> "Similarly, the staff objective of extensive freedom of choice by the pupils aroused the parents' hostility. Such choice was believed not to be in the best interests of the children, who, the parents argued, need planned guidance."

One might draw the conclusion that parents do not necessarily object to internal educational innovations if these do not change the function of the school. And, as we have seen, for most parents the function of the school as a "sorting mechanism", giving their children a good status in life, is still its most important function.

The case studies of the regions give a somewhat similar impression of the role of parents. They are sometimes formally represented in decision-making (Wetzlar), but in most cases are consulted only in an advisory capacity. As a group parents tend to have a "conservative" influence on decisions in the direction mentioned above.

As we have seen, those at the "grass roots level" are by no means a homogeneous group. In a small school community the most divergent views would probably be represented. What we have observed, however, is that the managerial group in particular, but also the professional group, is the strongest initiating group. Decentralisation of decision-making without changing the role of students, parents, and perhaps also the community, probably would not alter the present situation (see Chapter VII). A stronger influence (at the local level) from parent groups would probably have major consequences, since the expectations of parents, no doubt influenced by the general ideology in society, do not seem to favour the present educational reform movement (see last chapter).

INDIVIDUAL GROWTH

If we are right in our assumption that real innovations in the classroom and in the larger school culture happen only if the individuals concerned are motivated and actively involved, it must be important to look more closely at those measures which seem to increase the involvement of individuals. In Chapter V we already analysed the "climate" and other relevant factors in the process. We shall now consider different incentives, recruitment patterns and leadership roles.

INCENTIVES, SELECTION AND RECRUITMENT

When one analyses the case studies, one is inclined to think that motivation for innovative work in schools develops by accident. Very few educational systems - if any - have developed a well-thought-out strategy to motivate individuals for on-going innovative activities. This can probably be illustrated best at the school level by analysing the working conditions of teachers. In all the educational systems studied, the teacher had to perform his ordinary routine tasks, and his traditional amount of teaching, in addition to his innovative activities. Except for Norway, and partly Sweden, the teachers were not paid specially for the innovative activities, although in some cases, for example at the Rødovre School, the teachers had fewer hours of instruction to give than would normally be the case, and an extra salary per month. This is one of the few examples where there was some economic incentive for innovative work, but this school is one which was designated as an experimental school.

Those teachers who want to become involved in new activities soon come up against problems. Usually they find it impossible to do any educational development work without close co-operation with colleagues. Traditionally timetables in schools are arranged in a way which gives teachers few opportunities for co-operation. In many cases, not only does the headmaster or the local superintendent have to supervise any new activities but also the regional and even the central authorities have to give their permission. Schools are not usually equipped with the type of technical equipment and secretarial assistance which is necessary for the type

of work teachers want to undertake. Sometimes teacher development centres and other local development centres try to help teachers. From the case studies of Malmö, New Jersey, OISE and NCIE, we find that the "support structures" of regional or local development centres have provided an important incentive for teachers.

Many so-called "barriers" in innovative work are the result of new structures and procedures which have been introduced into a stable system designed for other conditions and other incentives. Those who are afraid of the use of incentives argue that it is not possible to find a system of incentives which is goal-directive and which operates without unintended side effects. What is seldom considered is that the existing system operates with very negative incentives and constraints for those who want to improve it. A conclusion from all the cases studied is that one of the most important steps to be taken is to analyse the total educational system in terms of those incentives which are offered (not only financial incentives) for all types of personnel in the system to see how far it reflects existing goal structures and how far it reflects the need for innovation in the system.

One of the strongest incentives is delegation of responsibility within the system. The case study of Oslo Experimental Gymnas shows that delegation or responsibility to students acts as a major incentive for innovative activities. The same is true for the delegation of authority to teacher subject groups, e.g. in Malmö, Tapiola School, Rødovre School and the York County. In all cases this delegation of authority has resulted in a variety of activities which would have been unthinkable under other conditions. Yet as we have already seen in the case of York, delegation of responsibility alone does not solve the problem. Although the projects which have been encouraged in this direction have involved a number of teachers in innovative activities, those responsible for these structural changes are rather disappointed by the low level of teacher interaction. Delegation of responsibility therefore has to be followed by creation of an incentive structure that realistically permits and facilitates such interaction. An incentive structure may be financial, or be part of an information structure, as, for example, in the work of the Schools Council.

We have seen that States and regions commonly use financial incentives for innovative purposes. This has happened more on the organisational level than on the individual level. Basically, however, they are not different in value terms or in technical terms. If decisions to implement certain desirable innovations

are taken by responsible democratic bodies at a certain level of the educational system, it is probable that the next step would be a careful analysis of organisational and individual incentives which could facilitate the desired change. So far, these attempts have been quite amateurish in the systems studied and we are inclined to draw the conclusion that a number of the problems and failures which have so often characterised innovative developments are the result of unsystematic planning of a new incentive structure.

In an analysis of incentives one must take account of the incentive structure of the wider society. The issue has to be seen in terms of careers, both teachers' careers and future students' careers.

RECRUITMENT PRACTICES

We have so far discussed the lack of systematic strategies in the use of incentives in the introduction of innovations in education. We shall now look more closely into policies for recruiting personnel for innovative activities.

At the school level

Although none of the schools studied can be called "experimental schools" in the traditional sense (except, possibly, Rødovre) they have all been known for innovative activities of one kind or another. There is no doubt that this fact in itself is a factor in the recruitment of staff. The type of person who applies for a job in such a school will have at least a positive attitude towards innovative activities. He may not be committed to specific activities but will not hesitate to participate in new types of activities.

Oslo Experimental Gymnas is a good example of the influence which an innovative reputation has on recruitment. This school had a difficult beginning and very few teachers have been appointed as permanent staff. This has affected the recruitment of personnel. Teachers who usually teach at this level generally have found the conditions too insecure and have not applied for the jobs. Also, from the outset the founders of the school defined a new type of relationship between teachers and students and created a new type of management which necessarily involved a radical departure from the traditional. Consequently, teachers could not possibly apply

for jobs in this school unless they were sympathetic in principle to the ideas.

In the Rødovre school, as in the Oslo school, although on a less radical basis in terms of teacher-student relationships and management patterns, the teachers feel comfortable with a certain educational ideology which has a respected tradition in Danish education and which has found expression in the composition of the teaching staff in this particular school.

As we have seen from the case studies of Leicestershire Region and the Countesthorpe College, the ideology of Countesthorpe was formulated originally by the Director of Education in the county. In its operation, the school has been very much influenced by its Warden. In his study of the Leicestershire Region, Brian Holmes (144) says about the recruitment policy of the region:

> "What Stewart Mason and his committee tried to do is to create conditions where teachers are encouraged to think for themselves and then to put their ideas into practice. . . Not surprisingly, therefore, Leicestershire teachers, being free themselves to work out what they feel is in the best educational interests of the children, have over the years passed on this freedom to the children."

The Thornlea school has had a different recruitment policy compared with the others studied. The Director of Education in the county has not tried to recruit a homogeneous teaching staff to the school. On the contrary he has tried to recruit teachers with different orientations towards educational developments. To a certain degree this has polarised the staff with major consequences for the process of innovation and it has also had major consequences for the type of innovations, at least in comparison with the other schools studied. While all the other schools tend to concentrate on a certain type of innovative activity clearly reflected in the objectives of the schools, Thornlea has been engaged in a variety of activities which have relatively little in common.

The common denominator in York County is the climate for innovation, which is reflected in the Director's and the School Principal's attempts to find individuals who would be open to new ideas and expect themselves and others to be engaged in innovative activities. This appears to have been successful in terms of reaching the school's objectives. Thornlea is certainly a school

open to new ideas and heavily committed to finding better answers to educational problems. The recruitment policy, therefore, has had a direct influence on the type of innovations, as well as on the process of innovation in the school.

In the Tapiola School the National Board of Education appoints teachers(145). The local board, however, has a considerable influence on the Tapiola School and advises on the recruitment of teachers. Also the Board has deliberately built up a teaching staff through incentives for innovative work, and the teacher representatives on the Board have been chosen carefully to reflect the educational ideas of the community. Over the years, therefore, the school has collected a rather homogeneous staff which reflects to a large extent the innovative ideas of the community. As we have seen from the study, the type of innovation is mainly subject-oriented and method-oriented in the curriculum area. It is therefore through a combination of selection procedures and incentives that the school has recruited over a period of time the type of teacher it wants.

The studies show that there is a clear relationship between teacher recruitment patterns and type of innovations in the schools studied. Different techniques have been developed to recruit teachers for innovative practices, both formal and informal, and in all cases this must be regarded as an important part of management practice.

It is possible therefore to use recruitment as an instrument to achieve certain innovative practices. What we have not considered, however, is the effect this may have on other schools. If a few schools are known to be "innovative" and therefore recruit the most creative teachers, two unintended effects may result. The other schools could be "drained" of possible innovative talents; and the contrast between the conditions in the innovative schools and the rest would be so great that dissemination of practices to other schools would be difficult both because the practices were too advanced, and because a psychological barrier might develop between the "innovative" and "the rest". This was exactly what happened to experimental schools in some countries (e.g. Sweden and Norway)*.

Per Dalin(146) has reported in a study of the NCIE in Norway that although certain schools are heavily engaged in innovative activities in a certain district, it may well be that a neighbouring

* For further discussion see Chapter VII.

school is not at all influenced by these activities. In many cases a deliberate attempt to stimulate and facilitate innovations in one particular school has a negative effect on other schools in the region, often because these "innovative schools" are considered different (having superior teachers or additional funds, etc.) or because in-group and out-group feelings determine the attitudes.

At the regional level

Since the major objective of the regional authority is not so much development of certain innovations in one particular school but rather continuous reform of the schools in the region, it may be that personnel policies have to be developed for the whole region and not only for certain innovative schools. The case of Malmö, where more than 200 teachers have been recruited to subject groups from all over the region, is an example of a personnel policy which attempts to provide a stimulus for teachers from all types of school throughout the whole region. Teschner(147) reports:

> "At regional level attention was concentrated mainly on the eagerness of individual teachers to have a say in shaping and changing their own situation and that of the pupils. It was believed that viable innovations can only come from a large number of initiatives of widely differing quality. Conforming closely to this strategy the Board of Education delegated specific duties to the subject groups of which more than 200 teachers and head teachers are members. One of the express functions of these groups is to draft proposals for educational experimentation. The consultants ensure liaison between the teaching profession and the Board of Education and it is their duty to take up problems recognised in the schools and to include them in the programme of experiments".

The region in fact has not developed a particular recruitment policy for personnel in innovative projects. On the other hand, the region has developed a structure by which the teachers can participate and through which talented and innovative teachers are identified and encouraged to take part in projects.

In the case study of Leicestershire region and York County one can see a deliberate attempt by the education authorities to recruit staff who favour innovative activities. In Leicestershire, reputation is an important factor(148):

> "It seems clear that the success of the Leicestershire

plan and the publicity it has received have helped to draw well-qualified teachers with the right kind of personalities to the county. While other authorities continue to suffer shortages, Leicestershire has no difficulty in attracting candidates for most posts. Of course schools in the suburbs close to the city are more attractive than small primary schools in more remote areas to which recruitment is sometimes difficult".

Loubser, Spiers and Moody(149) say about York:

"The York County Board organisation can be viewed as an example of careful selection of staff for the purpose of maximising the capacity of the system to change as the exigencies and needs of the population change. This is particularly true when we remember that amalgamation of the earlier boards two years ago did anything but provide a free hand in the selection of staff. In spite of this limitation the York County Board seems to have put together a staff that agrees on the desirability to maintain a climate favourable to innovation for the purpose of improving the quality of education in the County and to achieve the set of aims and objectives developed by the Board. Consequently, the York County Board seems to be able to invent or adapt solutions to problems they encounter and not simply to rely on ideas that have been developed elsewhere".

As far as both Devonshire and Wetzlar are concerned, the activities have not developed sufficiently for us to study recruitment policies. In the other cases, however, systematic recruitment policy is a major strategy and seems to have an important influence on both the direction of innovation and its process.

At the central level

In the central institutions for educational change there are certain common personnel policies, specifically the recruitment of teachers for development projects and the recruitment of institute staff.

The central institutions studied are very diversified and reflect different missions, organisational patterns and decision-making relationships. On the one hand, the Department of Research in the National Board of Education is a relatively small group concerned with the management of research and development in the whole country. On the other hand, RBS is a major research and

development institution set up to undertake the research projects itself. It is impossible to make direct comparison between internal personnel practices but it is possible to focus on overall patterns for personnel policies in innovation.

Recruitment of teachers for development projects

The case studies show that the central institutions have a relatively easy task in recruiting motivated teachers for development projects. The number of teachers engaged in development projects compared with the total teacher population is small and so far there seem to be more teachers motivated for development work than are actually engaged in projects defined from the central institutions.

In our outlines of the different agencies we have described the degree of teacher involvement in their work. The best example of a systematic teacher-recruitment policy can be found in the Schools Council, the work of which is almost entirely based on teacher involvement. The creation of a number of teacher centres around the country is another example of a strong emphasis on teacher involvement. In various ways the Schools Council tries to identify talented teachers to be recruited for development projects and here the network of people already engaged in development projects serves as a basis for fresh recruitment. In addition, the Council has grants to be given to individuals and teachers for developing ideas which are considered promising.

Both the NCIE and the NBE try in different ways to encourage individual teachers to develop their ideas. In the NCIE a systematic incentive policy has been adopted which to some extent recruits teachers with motivation for development projects. We have already seen some side effects of this policy and certainly the wisdom of recruiting the most talented teachers away from normal school work can be questioned. This is one way to compensate for extra work when the teachers are already engaged in development work, but it is not necessarily the best way of finding the most talented teachers. In Sweden also teachers with a heavy development load have received compensation for their extra work. Compared with Norway, however, the policy is implemented more strictly and confined to fewer teachers, though these receive a more generous compensation.

Over the last two years in the United States, discussion about accountability in education has created a number of new approaches to educational development. One of the consequences of this

discussion is a growing awareness of the need for identification of talented teachers and the use of incentives in education. The case study of the New Jersey administration and the Research for Better Schools show different examples of the recruitment of talented teachers to development projects. Although RBS is the organisation studied which is least concerned with teacher-based developments, the staff of RBS is fully aware of the need for recruitment of talented teachers and headmasters for their experiments as well as for their demonstration schools. The teachers, as we have seen, play a role in these schools different from that of teachers engaged in projects managed by the Schools Council. Although the teachers in the RBS projects are also actively engaged in the creation of projects, they are less so than their English colleagues. Their role is to test out projects already developed by the RBS rather than to initiate new developments.

The situation in the New Jersey innovative projects is different. Here the teachers are very actively engaged and talented teachers are identified through a broad network of contacts developed by the New Jersey school administration. Teachers are to a large extent directly responsible for the active development of new ideas and products.

Recruitment of institute staff

There are no distinct patterns in the recruitment of personnel to the institutions themselves. The recruitment pattern tends to reflect each institute's particular mission rather than a common view of personnel policies. OISE, for example, is primarily a research institution with an extensive graduate programme and employs academic criteria for the recruitment of staff. The NCIE, on the other hand, is a development agency and uses criteria based on practical school experience - management abilities, creativity and motivation - as guiding principles for recruitment. However, one particular trend can be noted which seems to have an important consequence for the innovation process. Some of the institutions, in particular the NBE, the NCIE, the Schools Council and the Bavarian Institute, are using a secondment system to acquire many of their personnel. In the NBE as a whole more than 50 per cent of the personnel have short-term contracts of about two or three years, after which they return to their former schools or administrative posts. The senior staff, heads of departments and divisions, stay on until retirement. In the NCIE about the same

proportion of the staff have short-term contracts, mainly as project leaders, and they also return to their previous posts in teaching or administration, or are promoted in the school system.

Almost the entire staff of the Schools Council is appointed on secondment from other educational organisations for periods of about three years. This policy is partly a guarantee against control by a career secretariat but is also a deliberate attempt to disseminate ideas of the Schools Council throughout the country. The Schools Council however has experienced some of the same difficulties as the NCIE, mainly the lack of experience or status of the short-term staff. Although this staff is very well acquainted with practical problems in their schools, they lack specialised knowledge in research and development. Therefore there is in both Norway and England a tendency to try to set up programmes of a more permanent nature.

The Bavarian Institute has a relatively small full-time staff representing various scientific disciplines. This staff has a continuous planning function and ensures continuity of the work in the Institute. Specific problems, however, are studied by working groups, by people who will be recruited to the Institute for short-term periods and who will return to their schools after the completion of the study. This set-up is mainly created to bridge the gap between theorists and practitioners.

Although there are organisational side effects of the secondment system as we have seen in the Schools Council, it is quite clear that a deliberate secondment policy has direct effects on the dissemination and implementation of innovations. The long-term effects of such a policy have had, in Norway and Sweden, direct positive effects on the quality of the work which is going on in the districts. In fact, both the National Board of Education and the NCIE indirectly have played the function of a "staff development centre" or an in-service training centre for future leadership in education at the regional level. Probably the rapid growth of curriculum development projects in the countries studied will have a similar effect if a secondment system is used.

We cannot, from the case studies, establish a close correlation between the secondment system and innovations which go on. We can, however, conclude that those who have been closely connected with certain development projects will in most cases become identified with them and stimulate the dissemination and implementation of them throughout the country and therefore directly influence the direction of change.

This also illustrates an interesting approach to dissemination. While we have seen that the planning-research-development and diffusion model through the development of teaching-learning systems or other "package approaches" has a number of limitations, we also find in the case studies that the implementation process can be greatly influenced by the secondment system of the central institutions. This may mean that the dissemination process can best be tackled by the development of individuals who can not only represent the technical aspects of the innovation but also reflect the ideologies and the attitudes and provide a "personal guarantee" which may be necessary for many teachers if an innovation is to succeed.

We do not know, of course, to what extent the secondment system actually "delivers" the trained personnel "back to the system" in all cases. In particular in countries building up a capacity for research and development individuals may use the secondment system as the first step in a new career structure. They find the work more rewarding than the previous work and find opportunities to stay in research or development on a more permanent basis. In the long run "permanent innovative careers" may create a new career structure as distant from practical school problems as is alleged to have happened in university research(150).

THE ROLE OF LEADERSHIP

To what extent have we identified key individuals in the case studies who have played a leadership function as defined by Lipham(151):

> "Leadership is the initiation of a new structure or procedure for accomplishing an organisation's goals and objectives or for the changing of an organisation's goals and objectives....."

We find that in the schools studied with the exception of Oslo Experimental Gymnas, the headmaster has this key role. The style of leadership differs in the schools.

In Tapiola the Chairman of the Board played a significant leadership role in the creation of the school. Today the headmaster has taken over and is often criticised by the students for "autocratic decision-making", a point of view shared also by many of the teachers.

In Rødovre the Rektor of the school is looked upon as the major

initiator behind the innovative work, based largely on his special knowledge, his network of contacts in the country and abroad, and his authority. Although the school cannot be said to be directed in an autocratic way, the Rektor does have considerable authority in his school. The innovative work is led by the principal, a point which is appreciated and accepted by the staff.

Both Countesthorpe College and the Thornlea school are led by principals who have tried to change the traditional role of the headmaster. Bernbaum gives the following comment:

> "There is a powerful tradition, in English education, of autonomy for individual schools. Usually this means that considerable freedom is vested in the individual headmasters, who have a great deal of control over the internal organisation of their schools. This is exactly the situation at Countesthorpe, where Tim McMullen has a great deal of independence in his handling of the internal affairs of the school. The great novelty at Countesthorpe, however, is that McMullen has refused to take on the traditional headmasters' authority. As was made clear in the earlier analysis, he is anxious to establish a participatory democracy in the school, and by so doing he hopes to achieve a number of aims: to increase the personal satisfaction of all members of the College: to increase pupil motivation through giving them the opportunity to influence or decide their own actions in school: to provide a model to the students of a desirable form of government: and finally, to increase staff motivation by giving them the opportunity to influence or decide their own actions in the school"(152).

A similar non-directive role is played by the principal at the Thornlea school. Many staff and students have found it difficult in the beginning to adjust to these unexpected roles of the principal. As a result, the Director of Instructional Services is in an influential position: he is looked upon as the "idea man" in the school, he is directly concerned with the day-to-day operations in the school and through his knowledge of current theory and new ideas in education he has been able to influence the direction of change quite considerably(153):

> "the Principal sees his own role as a "facilitator" rather than as an initiator of innovation and policy. While acting as a primary source of information from the York County Board of Education, he seldom enters

into substantive discussion of issues within the school, but seeks to identify emerging consensus and to facilitate its development."

"Partly because of role definition and partly because of his personality the Director of Instructional Services is undoubtedly the most influential "idea man" in the school. Whereas the Principal's connections outside the school concern primarily political, administrative and public relations matters, the Director of Instructional Services is one of the main sources of information about innovations outside the school - innovations at other schools, pertinent literature, current theory and new ideas in education."

We can conclude that leadership has played a significant role in the schools, and also that the leadership styles have been very different. We cannot, on the basis of our data, say why this is so, or to what extent different cultures and local environments facilitate the conditions for different leaders to function.

Very much the same conclusions can be drawn from the regional studies: the leadership function is essential, and styles of leadership differ. Teschner(154) reports about the role of key individuals in Malmö:

"In Malmö's case at any rate - and this is true both of the Research Department at the School of Education and of the Educational Development Centre - it is correct to say that the organisational context and the climate in which the manifold experimental initiatives originated were and are characterised by the thinking and inspiration of the persons who played a vital part in the foundation and shaping of the region's development institutions".

The typical "facilitator of innovation" is described by Loubser, Spiers and Moody(155) in the York region:

"From our interviews we gained the impression that this style of Mr. Chapman is widely recognised and appreciated in the system. It is thought that his ability to attract highly capable personnel to the system derives in large part from this style. Also, a large degree of the innovativeness that characterises the system, as we shall see later, is credited to the

fact that as a result of this style of leadership an atmosphere of shared responsibility and respect for autonomy permeates the organisation".

We do find one common characteristic in leadership roles (both in the schools and the regions), and that is the active search for information and knowledge relevant to the innovative activities. The Devon study(156) reports how one education officer defines his job:

"Searching for interesting educational developments wherever they can be found in print and circulating such findings to appropriate employees of the authority. Thus a wide search network has been established to retrieve from print ideas of relevance to educational change".

Leaders of educational innovation as studied in our schools and regions seem to have access to information and use it systematically in the process. Since information is not a neutral phenomenon, those individuals who control information have a powerful position, even if they are looked upon as "non-directive", or "democratic". We do not have comparable data about the way information is gathered and used. Since we have found (Chapters IV and V) that most innovations are adoptions of innovations from other places the information process seems to us to be a key factor relevant for further studies.

It goes without saying that the director of a central institution set up to develop and implement innovation by our definition must play a leadership role. This role is often characterised by many frustrations. Ovsiew(157) says about RBS:

"Considering that RBS has had always to swim upstream against the educational tide and that any rock in that river of institutionalization could have killed it, the leader must have been, at the very least, either a very skilled or a very lucky pilot".

In the American and Canadian studies one can observe a stronger emphasis on leadership than in the European studies. Usdan(158) says:

"The Commissioner believes that people are more important than tables of organisation. When he accepted the New Jersey Commissionership he wanted someone like the Assistant Commissioner to stimulate thinking and to generate ideas".

Although the Director of OISE plays a somewhat non-directive role, the leadership function is diffused throughout OISE and is exercised quite effectively at many points in the structure.

In the studies of the Schools Council, NCIE and NBE, one cannot so easily observe the role of leadership. The Schools Council in fact is run by three joint secretaries, which, according to Nisbet(159):

> "..... is a means of limiting the authority of the Secretariat on the grounds that the Council's strength must come from participation or it will fail in its declared purpose".

Although the role of leadership is not stressed as important, one can observe that the Director of NCIE, the Secretary General of the NBE and the Director of the BRP (Bavaria) have very strong positions in hierarchical organisations. Weinert and Simons(160) say about the role of the Director:

> "By comparison with the other staff members, the Director is of course able to fall back on his fuller information, greater power to take initiatives, argumentative skill and ability to gain acceptance of his own ideas coupled with the influence of his position".

Their control of information, direct access to other influential institutions and individuals, and decision-making power inside their institution give the Directors a unique leadership role.

Case studies over a short time-space do not provide adequate data for an in-depth study of the role of leadership. A longitudinal study might have given more illustrations of the effects of continuity versus change in leadership positions over time. One might have postulated, as some of our data indicate, that in those cases where the Director has influenced the institution over a long period of time (OISE, NCIE, BRP), or where the same political party has been in power over a long period of time and controls appointments (NBE), the leadership role has had a decisive effect on the direction of change as well as the process of change.

Chapter VII

ALTERNATIVE ROLES OF RESEARCH IN EDUCATIONAL INNOVATION

Educational research and development are in most countries a relatively small endeavour but are growing fast in America, Canada and most West European countries, although the rate of expansion varies from country to country(161). The process is becoming more and more institutionalised, and in most countries institutions outside the universities also take responsibility for educational research and development. This is true for the research and development centres and the educational laboratories in the United States established after 1965, as well as for major innovation centres or regional development centres created in Europe within the last five to ten years.

The growth of educational research and development has resulted in new types of institutions. Although the traditional institutions, mainly in the universities, have experienced some expansion, the major growth has been canalised to new institutions with innovation in education as the only or main mission.

This development implies to some degree a criticism of traditional university research. This research has often been criticised for being irrelevant to educational policy, and its management has been criticised for poor organisational and administrative arrangements and inadequate provision for information and dissemination.

The change from university research to large-scale research and development organisations in most countries has been regarded as a strategy to increase the relevance of research and to increase its impact on educational practice.

Although this change in the organisation of research does not necessarily imply a change in the role of research, this nevertheless has been the result, as we have seen above (Chapter III). In this chapter we shall try to analyse alternative roles of research. In doing so we shall analyse and synthesise our knowledge about the P-R-D-D model which illustrates one important

role of research, and later discuss other roles which emerge from the case studies (see task No. 5, Chapter II, page 56).

What are the objectives of educational research? The role of educational research is obviously connected with its objectives. Kjell Eide in a recent CERI report says on this point(162):

> "In terms of its actual and potential consequences, research influences practically all societal goals, but in practically no case is research the only means serving those goals. As a field of policy, research has no independent goal structure."

The usual definition of educational research, however, is concerned with whether this activity is an instrument of educational goals in general, or serves activities undertaken by educational institutions. The problem with these definitions, as Kjell Eide also points out, is that these definitions of educational research are meaningless if, in fact, educational policy has no goals of its own.

There is a clear trend in the countries studied for the area of educational policy to be interpreted more broadly. In some cases, also, educational research institutions have been given a wider mandate than before and one can foresee a radical shift of emphasis from traditional pedagogic research concepts to research into learning as a function in society. Husén reports on a policy that has evolved at the Institute of Education at Stockholm University(163):

> "..... a system of methods for exerting influences that must be adaptable to the specific determinants in every part of society, which will require changing the norms, ideas, skills, etc., of individuals acting in the system" (Studieplan, 1967, p. 1). "As thus conceived, the discipline of education is looked upon as a general science of behavioural changes. In concrete terms it signifies that research into problems of social welfare, old-age care, penology, and other special therapy is considered as belonging in part to the realm of educational research."

As we have seen from the case studies, none of the institutions studied has conceived educational research in this broad context. They play, however, different research roles in relation to educational policy and in this chapter we shall be concerned with

these different relationships and their implications for the innovation process. We shall discuss the following roles of educational research:

1) Research in the P-R-D-D model;
2) Policy-oriented research;
3) Research as "informative criticism" in schools.

A discussion of research roles can have different orientations. We shall be concerned with questions related to the nature of research (in contrast to other activities in the process of innovation), to problems related to the definition of research (who defines it), and to questions about "target populations" (research for whom).

1. THE PLANNING-RESEARCH-DEVELOPMENT-AND-DIFFUSION MODEL (P-R-D-D model).

It has been one of our main tasks in this volume to analyse the process of innovation and relate our observations to the P-R-D-D model. We began by considering to what extent in the innovations studied the underlying assumptions of the model could actually be demonstrated in practice. Only in a few cases did we find that the process is mainly a rational and carefully planned one. Although all the phases in the process are important factors in any innovation studied (although severely "under-developed" in some cases) they are seldom sequential. The model also builds on consensus as a basis for action. One of the striking findings is that this basic agreement is seldom achieved, and therefore strategies other than empirical-rational ones are used.

The model is based on the assumption that carefully planned, developed and tested programmes can be disseminated throughout the whole nation, and this implies a readiness of local school districts, schools, teachers and students which is probably unrealistic. Resources are spent in the development process, while "host readiness", the willingness and ability of the user to "take" the innovation, may well present a greater problem than the product development itself (see discussion in Chapter VI).

In all the studies of central institutions, as well as in the Malmö region study, research plays an organised role in the major development projects, especially in curriculum development projects. In the mid-1960s the role of research in these projects was connected with the evaluation phase. The researcher was seen as a

resource person who could evaluate the benefits and side effects of a specific project. Quite soon, however, the researchers began to play a role throughout the whole process, being involved in all phases from planning to evaluation and revision. The reason behind this was that the researchers could not really play the role of evaluators if they were not involved in the definition of the problem. Quite often practical development projects were of such a nature that no reasonable evaluation approach could be used without a much more precise definition of objectives and a more precise planning and development cycle.

A good example of this research role, and of the problems involved, is to be found in the project of "Remedial Teaching at the Malmö Educational Development Centre"(164).

> "The example of remedial teaching makes it clear that evaluation must not be interpreted - at any rate not exclusively or primarily - as a well-defined and relatively late phase of an innovation process. Instead, a working pattern was adopted which is best described by the German expression 'wissenschaftliche Begleitung' (apparently no real equivalent has so far been found in either Swedish or English). This expression connotes a procedure whereby a field-controlled or a more or less politically-controlled innovation strategy is subjected at relatively early stages (e.g. the problem-identification phase or the objective-revision phase) to scientific inspection and its interim findings, without direct control of the project being surrendered to science or the scientists. In principle this is the underlying concept of the entire Educational Development Centre, although the remedial teaching project is one of the few concrete projects in which it has really been applied.
>
> In fact this procedure is limited, on the one hand, by the willingness of the initiators and controllers to await and have regard to scientific findings and, on the other, by the willingness of the scientists to invest their expert knowledge in a project controlled by others."

The researcher, as one can see, plays an expert role in this context though he is not himself in charge of the project. The same role is evident, with modifications, in most of the institutions studied.

In the Schools Council the role of research is clearly defined as a background to development work. The type of investigations which are undertaken by the research staff are therefore usually short-term and have a clearly defined object. Some of the work is of an advisory nature, giving advice to the Council's committees on research needs, helping in project design and maintaining contact with the projects in the course of their work, and in particular helping to assess the possibilities and limitations of the projects.

This supportive role of research is defined in the 1968 report(165):

> "The Council only finances educational research when it can foresee a return in terms of help to teachers in devising a curriculum for the pupils with whom they are concerned.... Research therefore merges naturally with 'development', which can be defined as the rendering of the results of research into a form which will be of practical use to teachers."

The first report in 1965 took a wider view, i.e. that the Council should be ready to fill research gaps, even by fundamental research if the needs of the schools cannot be met in other ways. The Director of Research in the Schools Council in a recent article(166) expresses the view that although curriculum development has so far avoided the need to initiate large-scale research projects, fundamentals cannot be ignored in the long run.

This is a point of view which is also clear from the study of Research for Better Schools (RBS) where it is stated that "base line" data are needed for further development work and that closer ties are needed between more fundamental research and development work. In the RBS, as well as in the Schools Council, there is no clear distinction between research and development, but in both cases the development activities are the major concern.

Only in the last few years has research played an important role in the development projects of the NCIE. In contrast to the situation in NCIE, RBS, Malmö and the Schools Council, the projects in OISE are to a large extent <u>controlled</u> by the researchers themselves (not only "wissenschaftliche Begleitung"). The institution has many similarities to a university setting with the departments, professors and other resources which are needed for a graduate programme. OISE is in fact responsible, through a special agreement, for the entire graduate programme in education

at the University of Toronto. The development projects therefore are planned, developed and controlled by educational researchers. As we have seen before, however, they are only loosely connected with educational decision-making or day-to-day school problems.

In New Jersey research efforts are not very far developed, although there is some research connected with evaluation of development projects. In Bavaria the situation is rather different since, as yet, development projects are rare and therefore the question has not yet arisen.

Thus with the exception of OISE and, in some degree, RBS, research plays a supportive function for development work, and the situation described in Malmö is, essentially, the situation in most institutions studied. Research is increasingly playing a role in the planning, development and evaluation of innovation but it is seen as a support function and has authority only in so far as it supplies information "relevant" to innovation ("relevance" is usually defined by others and not by the researchers).

Even though development is a new term in education, it has been used for a long time in the educational history. It is only recently, however, that development has been connected with research and changed into a systematic process.

The change from rather ad hoc development efforts, which have been the main emphasis in the past in education, to a more systematic development process can be summarised in the following points:

1. A wider co-operation between professionals has been established to identify problems, design new solutions, develop new materials, try these materials out and evaluate and revise the developments.
2. Development work is always tested in real school situations and feedback from these experiments is the basis for new creation and development.
3. The development work in most cases tries to use more sophisticated and systematic planning techniques and evaluation techniques as a basis for the work.
4. In most cases the development of a product is only the first step in a dissemination and implementation process in which sophisticated techniques are used to get the developments integrated in day-to-day school practice.

In theory, therefore, the new type of development which we are considering is based on some sort of an "engineering model"

which aims at offering the schools new and better techniques to solve their educational problems. As we have seen in the case studies, however, the model is used only in a few cases, mainly in curriculum development work.

This being said, however, we shall try to establish how far the type of development work we are discussing here has contributed to educational development in general, and what benefits it has for the innovation process. Traditionally, development in education has not strictly been connected with the planning-research-development-and-diffusion model. In fact it was an activity in its own right where the creation and design of new educational practice was the main concern and where evaluation and research played a minor role, if any at all. It is quite clear that major reforms like the comprehensive school reforms in Scandinavia could not have been carried through without large-scale development work. The result of all these efforts was that new insights were gathered about the learning process, not so much because of the successes of development as because of the failures. In most work of this kind a typical trial and error process operates and it is hard to predict the outcome.

In this situation, however, in all the countries studied, greater and greater emphasis was laid upon more thorough planning and control of development, and more sophisticated research and evaluation techniques were designed to do this job. The trial and error method of development had many side effects and the need for a more systematic planning, research and evaluation cycle was foreseen. The reason for this was the feeling that insight could be gained much faster in this way, and also that uncontrolled experimentation could easily produce a backlash, since the public would claim a right to control what was happening to their children.

The next important result of the development work has been the creation of a capacity in the educational system to cope with more sophisticated demands from society. In the late 1950s when it was clear that the curriculum had to be changed thoroughly if it was to cope with the needs of modern society, few educational systems had the capacity to develop new curriculum bases. On the one hand, the increased amount of knowledge in each discipline, and, on the other hand, the need for new ideas to be tested in real school situations meant that some systematic process of innovation was likely to be adopted. There were few institutions, if any, to do this work and few people who had the orientation, the

motivation and the skills to do so. The situation today is different. In the countries studied a growing capacity can be observed for this kind of work, in financial and organisational terms, and in terms of motivated and qualified personnel. This is particularly so at the central level, but it applies also at the regional level.

In the assessment of development as a new function one is struck by the effect that this work has had on personnel development. In all the countries studied development work has recruited a number of talented people and the work has given these individuals a unique opportunity to create and test a number of ideas. As this is a deliberate personnel policy, in some cases development begins to play an important "training" function in the educational system.

Is development research or a separate type of activity? Development has been defined by John Wirt(167) as:

> "the creative process of inventing new products, systems or procedures".

As seen in those cases where the P-R-D-D model is used, development cannot easily be distinguished from research. Both are creative processes, systematic, well defined operations and directed towards the same goals.

There are few areas in education where a clear set of limited objectives exists. This is probably one of several reasons why the P-R-D-D model is unlikely to succeed in certain educational problems.

Often where objectives are operationalised, only the cognitive variables are taken into account because they are more tangible and accessible to measurement. Therefore products are created which reflect certain parts of the goal structure and there is a great danger of producing side effects not directly related to the more broadly defined educational objectives. Education differs in this respect from other fields like industry or agriculture or medicine, where often one-dimensional goals reflect the existing decision-making structure.

The model also implies that education can be treated as a "system" in its own right. It is unlikely that education can be treated as a system since its boundaries are not well defined and since its goal structure is both wide and internally contradictory. If, therefore, education as such is not a defined system it is rather difficult - if at all possible - to define any sub-parts of this entity as a system.

Any development project following the P-R-D-D model must therefore be based on the selection of certain objectives as priorities. Obviously this selection in itself is difficult and even then one is left with the question: who is in the right position to make the selection of priorities? So far the large-scale development projects which use this model have tended to concentrate the work in relatively large organisations, often connected with central decision-making but in some cases as independent organisations (RBS or OISE). In all cases, however, one is left with the impression - in particular since the prolem-identification phase is weak in all these organisations - that a fairly small nucleus of staff makes the decisions in launching curriculum projects. This is a feature which was unknown only a few years ago. Previously, either the decisions were taken on the central level and were left broadly to be determined by the local authorities or the schools, or they were taken by the headmasters or the teachers in the schools themselves. The researcher, together with the people who are in charge of development, is therefore creating a function which is not only a research and development function as such but a rather powerful role in the education decision-making process.

A side effect of some development work, particularly of the earlier developments, was that the teacher was left with a somewhat mechanical role, no longer having responsibility for the formulation or interpretation of objectives; instead he had the rather passive role of organising the instruction in accordance with the prepacked solutions. This applied even in the projects where the development organisations tried to involve as many teachers as possible in the development phase. Quite clearly, the number of teachers who were not involved in the development process was far larger than those who were.

It is clear from the studies that the teacher in the traditional classroom situation has generally been left with the choice of traditional ex cathedra instruction due to lack of material (either for group work or individual work). New types of development, with a variety of choices for learning situations, have created new opportunities for more flexible instruction.

These later developments have tried to prepack a curriculum as units into a programme with alternative contents, methods and organisational alternatives. In these cases a choice among these prepacked alternatives is left to the teacher. Does the teacher in this case really have a choice? That depends upon the degree

to which the alternative packages are real alternatives. Moreover, it depends on the understanding of what the teaching-learning process is all about. If one understands it as a creative dialogue between teacher and students and among students, certain prepacked lessons can limit the choices rather than provide alternatives.

As we observed in Countesthorpe College, one of the main problems for teachers was the lack of available material for individual instruction. It is a clear conclusion from this study as well as from the Rødovre, Thornlea and Tapiola studies, that teachers want material for individualised instruction, but they also want to have maximum freedom concerning its use. Interestingly enough, the examples where the model has been most successful have been in subject areas in the curriculum field where the objectives are mostly of a cognitive nature and relatively easy to operationalise. Other developments show that in specific areas where well-defined knowledge and skills are desirable the model can be adapted successfully.

There seems to be evidence enough in the case studies to conclude that readiness in terms of motivation of the users (students, teachers, parents, administrators, community) is clearly more important than the "readiness" of the product to be used. From the studies of the central institutions one may be tempted to conclude that a systematic research-oriented development process provides the key to improvement. The case studies of regions and schools make it clear that this is only one aspect, and maybe not the most important aspect of the problem.

Chase(168) having studied the R & D process over a lifetime, says in a recent paper:

> "My studies of educational research and development and observation of pioneering schools in the United States and other countries leads me to be sceptical of the concept of a perfectly engineered and user-proof system. Even if freedom of choice is only an illusion, as some behavioural psychologists assert, it is an illusion that affects the extent to which persons will commit their efforts to the success of an enterprise."

In a background paper for a U.S. Congress sub-committee Chase further concludes(169):

> "Let no one imagine, however, that the urgently needed improvements in education will result simply from having

one type of organisation design and develop products for use in schools, colleges and other educational agencies. The adaptation of educational institutions to the needs of our times requires both incremental and reconstructive changes. These changes cannot produce the desired effects unless there exists within the adopting agencies a predisposing set of conditions.

The success of innovations is increased when:

1. A preceding analysis by members of the adopting agency has identified poorly achieved objectives, low performance of functions to which the agency is committed, and/or newly identified needs for education which require attention;

2. The effects which the adopting organisation wishes to achieve have been specified as explicitly as possible;

3. The choice of a particular innovation or set of innovations has been made after careful examination of available alternatives;

4. Personnel in the adopting organisation are given help in making the changes in their own roles and behaviors which are required to gain the full benefits of innovation;

5. The clientele to be served, including students, parents, and others in the community affected are involved in the definition of needs and decisions as to the nature of the changes desired."

2 POLICY-ORIENTED RESEARCH

In those countries studied where the central institution in one way or another is connected with the educational decision-making structure, the role of research in relation to decision-making seems to be a major issue(170). (See task No. 6, Chapter II, pp.56 and 57.)

In Sweden, where educational objectives in general are accepted on the basis of definition by Royal Commissions and Parliament, research is seen essentially as a means of clarifying certain issues or of supporting certain policies(171). This was evident already in the early 1950s when the experimental programme for

the new comprehensive school was guided by educational research. The researchers were asked to concentrate on those practical problems that were "produced" by the new educational reform. From the start in Sweden educational research was looked upon as a service function for educational policy. The clear implication of this view is that those who decide educational policies should also assume a role in defining the problems of educational research, contracting out to research institutions and individual researchers those projects which are considered essential for the implementation of the educational reform. This does not mean, of course, that the educational researcher is not critical of the implementation of policy (as for example in the curriculum guidelines from NBE). The overall political and social objectives tend to be taken for granted, however, although Parliament has stressed the need for research which does not take the general development in society for granted, but questions the "trends" and helps in the development of new policies.

The same link between educational policy and educational research is obvious in the case of the Bavarian State Institute for Educational Research and Planning. On the reason for the founding of the Institute Weinert and Simons say(172):

> "In 1966, however, the Deutscher Bildungsrat (German Education Council) was formed with a view to standardizing and reforming the German school system. From then on there was a much greater need for scientific evidence in support of regional ideas; political backing was no longer enough."
>
> "The task of the Institute was 'examining school and educational policy problems at the request of the State Ministry of Education and Culture, and, in particular, preparing studies and plans in co-operation with persons who have active practical experience in all types of schools.'"

The Ministry of Education and Culture also uses the Institute for short-term assistance in reaching decisions on matters which lie outside the scope of its priorities. This work consumes up to 70 per cent of the Institute's capacity and therefore links it even closer to the educational decision-making hierarchy. This close link with the Ministry has led the Institute not to embark on research until it is fairly sure that its activities will meet the needs of the political decision-making bodies.

However, many of the researchers themselves oppose this close tie with educational decision-making. This is illustrated in the Malmö case study(173) where conflicts have arisen over the relationship between educational policy and educational research. Some researchers are not satisfied with the role of finding solutions to already-stated objectives. They want to question the objectives themselves and, still more, the methods proposed for attaining these objectives. This seems to happen more and more even in R & D projects contracted with NBE.

Central authorities in Sweden do realise the problems involved in central control of educational development and research. In a recent memorandum Sixten Marklund (who is director of research in NBE) says(174):

> "There are no 'correct' interpretations, but a local, regional or national school authority may regard certain interpretations as better or worse for the general interests the school has to serve ..... A ..... necessary commitment to development presupposes that the person concerned be allowed to participate in the interpretation, testing and evaluation. Consequently a remedy for the alienation of the teachers, to which we have referred, consists in constructive development, in the testing of new methods and materials, in appraising the results, in the communication of such results to others (horizontally to fellow teachers, vertically to regional and central authorities) ..... Thus development work is largely the active interpretation of the objectives of the school."

The educational practitioner therefore, as well as the educational researcher, is invited to participate in the interpretation of the educational objectives. Liberally interpreted, this gives a large degree of freedom to local initiative and to educational researchers.

One is inclined to think from the experience of the 1960s, however, that central authorities will have difficulty in specifying educational policy in a form which takes local experience and research results into account. The Malmö study underlines that in the study plan of 1969, with the introduction of the flexible grouping system, the authorities did not take into account the findings of the systematic experiments. In some cases the

major publishers proceeded faster with new "teaching-learning-systems" than desirable from a research point of view. To some extent therefore the central authorities found themselves faced with a "fait accompli".

In the case study of Bavaria, Weinert and Simons argue for a critical research role(175):

> "Attention, however, has also been drawn to the fact that as a basic principle the aim of such an Institute should not merely be to shape opinions and prepare for decisions; it should also appraise existing decisions critically and urge a review when this seems necessary in the light of scientific evidence or expert knowledge. However, doubts have been expressed as to whether these expectations can be met by an Institute which is directly dependent on the Ministry of Education and Culture."

This view is based upon the assumption that educational policy can be tested against "scientific evidence" or "expert knowledge". In some ways this would place the researcher in an evaluative role vis-à-vis the policy-maker, assuming that someone should and is able to take an "objective" view. We have considerable doubts about the desirability and the probability of this point of view.

The situation in Norway can, to a large extent, be compared with the situation in Sweden and Bavaria. The NCIE is connected with the Ministry of Education. Its budget is approved by the Minister and to some degree the Council's research priorities are supervised by the Ministry. To some extent, however, as in the case of Bavaria, the NCIE as the responsible development agency has a role in the critical analysis of effects and side-effects of the innovation-policy.

The situation in New Jersey is somewhat different. Research is done in much closer association with the Department of Education. The distinctions between planning, research and evaluation are not clearly defined - probably on purpose - and the RPE, to some extent, is a "think tank" where innovations are created which later become policy.

RBS, the Schools Council and OISE (except for its graduate programme) are not directly connected with educational policy. They are all three established, however, as development-oriented organisations and obtain their funds for these kinds of activities. So far their impact has been largely in the form of products

aimed at improving educational practice in the present context, and seldom to raise questions about the educational policies themselves.

The relationship between policy and research has been debated over the last hundred years. The role of research has shifted emphasis from the free, classical, academic research tradition largely unrelated to politics, to a policy-dominated research, urged by OECD (among others) in the sixties, based on the assumption that research in general is an important factor in the economic growth process. Today we are probably seeing a shift in emphasis again towards research that plays a more independent and actively critical role in society(176).

Husén(177) describes various types of educational research. The first type of research is related to educational structures and problems concerning educational objectives and differentiation problems. This type of research is highly related to political objectives. The other type of educational research focuses on the classroom situation, concentrating on teaching/learning problems. Husén chooses a compromise view on the relationships between researchers and policy-makers. The relationships should reflect "a proper balance to establish good liaison with the policy-makers without becoming evangelists and without scaring the other partner into withdrawing his support".

If research, however, is to be able to play a role which reflects its possibilities and limitations, it has to be realistic about its own mission. In his discussions of different perceptions as reflected in present research, Messick(178) concludes:

> "What is at issue is ideology. It is not the implications of research results per se that are to be implemented in the proposed strategies, it is the implications of research as interpreted or filtered through a particular ideology about the nature of man and society. In this sense, research does not directly determine the aims of educational practice or educational change, nor should we expect it to. It instead serves to refine, to justify, and in its finest moments to challenge directions that are primarily ideologically determined. Its most powerful impact comes on those rare occasions when it stimulates a change in the mediating conceptions, especially when it produces a change in our conception of the human being as a learner."

Eide, in his study of Educational Research Policy(179) introduces the term informative criticism as the proper role of research in the educational system. By this he means that the researchers have the responsibility for bringing all relevant information to the users, who may be the policy-makers, or other user groups in the educational system. Research information will necessarily be used to support policy, but would also ensure a debate about the policy, bringing into the open all relevant information about the issues in clear and readable form. Educational research, as Eide sees it, should have a pedagogical function in the system, helping to foster critical attitudes in and outside the educational system.

3. RESEARCH AS "INFORMATIVE CRITICISM" IN SCHOOLS

The role of research, its impact and its relevance is directly linked with the question of who defines it. We believe that the analysis above shows that research by the nature of its relationship to policy-makers serves certain objectives and certain interests defined by policy-making bodies. This, of course, is not necessarily wrong. It should, however, have implications for the way research findings are used.

We are concerned with strategies for innovation, ways in which urgently needed renewal of educational practices can be facilitated. Can research play other roles than those described above? There are in fact very few examples of alternative roles (at least in the case studies). We do, however, see a clear need for research at the school level, defined in a dialogue with the user, done in co-operation with him, and used by him with the help of the researcher.

Research is not an integral part of day-to-day practice in any of the schools studied. We have seen in Chapter III that evaluation is the weakest part of the innovation process in the schools. In some cases, however, research is done in specific projects - for example, in Thornlea School, where a number of research studies have been carried out by the Research Office in the Division of Planning and Development in the County. The same is true of the Experimental Gymnas in Oslo where a number of research projects have been carried out, some by the Research Office of the Education Department in Oslo. In the case of New Jersey an education specialist with a research function has been connected with the Model City Project where he not only advises but remains "to live with the consequences of his actions" - as Usdan puts it(180).

Except for the last example, the research function is really not connected directly to the day-to-day school practice but is limited mainly to an expert role of assisting decision-makers or directors of large-scale development projects.

The case studies illustrate that schools cannot normally be expected to adopt and adapt innovations disseminated from other places, but partly at least have to work out their own solutions to their own problems. If, then, the individual schools have to learn their own lesson, how can research help them?

From the analysis of the schools we conclude that research can play the following roles directly connected with individual schools:

1. To help identify problems, clarify value conflicts, power relationships and decision-making problems in present practice (problem identification).
2. To help identify alternative practices for the school, together with the staff and the students in the school (problem solution).
3. To help the school to link its resources with outside resources in the County or outside the County (linkage).
4. To help the school to set up development projects that can serve the purpose of a continuous learning experience for anyone involved (development).
5. To help schools evaluate these learning experiences and to revise practice along the line (evaluation).

These suggestions indicate that researchers can play a direct role in individual schools - although the "research function" must be widely defined. This function may look like the "action-research-approach"(181), an increasingly popular research approach also in education. There are many common aspects. The danger in both approaches is that the researcher unconsciously enters into the process with in-built values and goals that he wants to pursue, or during the process (consciously or unconsciously) creates a power-base where he advocates certain values and goals.

The active involvement of researchers in the schools (as elsewhere in the system) can only be defended as a "consultancy"-role with the main objective of assisting in an on-going innovation process by bringing research information out in the open and thereby creating a critical attitude which penetrates the system.

Chapter VIII

BARRIERS AND UNINTENDED EFFECTS

In our study so far we have used a number of examples to illustrate the problems of "barriers" in educational innovations. In the case of the schools, for example, we have seen that in spite of all good intentions from the teachers and the school administration, parents and students at the end do expect the schools to perform according to traditional output criteria, even after years of experience with new educational practices. These reactions, as well as a number of others which we have referred to, are in fact barriers and unintended effects in the innovation process. In this chapter we will look more carefully into some more basic factors that might explain several of the unintended effects in the innovations studied. We do not necessarily look upon them as unwanted effects (see task No. 8, Chapter II, page 57).

STABILITY AND CHANGE

Nearly every book on innovation starts with a description of our "rapidly changing society". The argument goes as follows: "Changes happen all around us and the school has so far not been able to adapt itself to these types of change. Only a couple of generations ago the changes that took place were merely connected with the slow evolution of society, mostly connected with the take-over of the new generation. Now, however, the changes that used to take place over a whole generation happen in a few years. Through mass communication, modern technology and science we have entered a period of rapid growth which will continue and even increase".

It is undoubtedly true that a number of changes take place today which would not have taken place only a few years ago. It is also true that these changes happen more and more rapidly. What is not necessarily true, however, is that the type of change

characterised by rapid economic and technological growth will continue in the future. Bringing up children in a climate of restless change may be as dangerous for the new generation as bringing them up in a climate without the dynamics of change. One might well argue that the most important concern in education today is the upbringing of children who can critically evaluate the direction of change, on the grounds that much of the change we see around us could be described as change for the sake of change. It may well be that a generation which has somewhat uncritically looked on growth as the basis for human happiness and life is not the right generation to guide the coming generations into a future which may look different.

What we are concerned about is the attitude of uncritically engaging in the innovation process without a much wider consideration of its purposes and unintended effects. This is not only a problem in education but a general problem of social and technological innovations in society. While uncritical use of natural resources may be the major concern of our generation, uncritical use of human resources may well be a second major concern. We do not question the need to establish an educational system which can respond dynamically to present-day problems, but we do question the need for a system which is engaged uncritically in continuous change.

From our case studies we have seen that students, teachers and parents often have second thoughts about many of the innovations which go on in the system. Sometimes these reactions reflect the deep need for security in the lives of the people who are influenced directly by the educational system. After reading the descriptions of innovation we believe that there is a serious need for stability in the system as much as there is a need for innovation.

How can a system reflect both the need for stability and the need for innovation? We think that this basic problem cannot easily be answered in the study from the results of our case studies. There are, however, certain points which have already been identified in this study:

1. Time

Changes in social systems take time. We do not believe that this is necessarily a conservative or pessimistic statement. Many of the "barriers" which have so typically been exposed in the case studies reflect merely a need for more time rather than anything

else. But most decision makers do not take this particular need into consideration. On the contrary, many systems seem to operate under the ideal of as many "results" as possible in the shortest possible time.

Some of the funding principles, for example, particularly those studied in the case study of the RBS and New Jersey, raise just this issue. One cannot in any sense expect real changes in social systems in half a year to one year. If the need for success and "accountability" is so great in the system that an innovation has no real chance to prove its possibilities we shall very soon create a system that will uncritically, and unsystematically, try to show "results" in a quite unrealistic time span.

2. Problem identification

As we have already seen, the weakest part of the innovation process is the lack of a systematic problem-identification phase. Innovations are so often started on the initiative of creative individuals; seldom is an innovation the product of a careful search for better answers to problems which are commonly felt. Much more time should probably be spent in a dialogue with those people who are directly concerned in the definition of problems in the system. Seldom of course will unanimous agreement be reached but one might come to a conclusion that a certain innovation is worth trying and that trying really means trying. It does not mean a "fait accompli", but a starting point for a continuing dialogue.

3. Learning

Any innovation process is a useful learning process for those who initiate and develop it. The outcome of this learning process will be different from individual to individual. Some will feel great satisfaction with the outcome of the process, others will be more sceptical, and others will be indifferent. The real learning takes place when these groups of individuals try to understand why the outcomes are different. Innovations are not "good" for everybody. Usually one finds that the benefits vary from individual to individual. Only when a system understands the real effects of its own practices, and in particular the effects of planned innovations, will the system be able to establish the balance between stability and change that will serve the individuals involved.

UNREST AND CONFLICTS

The case study sites were chosen to show innovations in exemplary settings and to try to understand the process of innovation in these contexts. An unintended effect of this selection procedure was that few sites were chosen where unrest and conflicts were a major problem. In spite of this, however, we have seen a number of examples of conflicts existing in the organisations studied, as well as resulting from the innovations which have been implemented. A major conclusion, in fact, has been that only in very few cases is consensus the basis for innovation in education and that conflicts are a natural consequence of conflicting values and vested interests.

A danger in the types of planned innovation which we have studied and analysed is that they fall very easily into a pattern of technocratic strategies that produce long-term results but do not necessarily respond to the unrest and the conflicts in the system. How is it possible, on the one hand, to manage a planned innovation process over some years and, on the other hand, to respond to day-to-day unrest and conflicts in the system? How can one combine fire-fighting and long-range fire prevention?

There seem to be two different answers to this problem:

1. It is possible to consider long-term and planned innovation as an organised activity in itself, and the unrest and conflicts in the existing system as reactions that have to be dealt with as day-to-day problems, that do not necessarily influence the long-term innovations which are being planned. In such a case, the organisational management responsibilities will probably be divided in a way that reflects innovative responsibilities on the one hand and maintenance responsibilities on the other. The great dangers of this solution, however, are that the long-range innovation activities are created in a social vacuum and that the daily administrative problems are isolated from the research and development process.
2. The other solution is to look on the unrests and conflicts in the system as main resources for problem-identification and use this as input in the planning process. Probably, however, this will result in the following pattern:
   i) the process of development will to a large degree be a decentralised process taking place in the individual schools and regions;
   ii) there will be little long-range innovation planning,

and it may take place in only a few areas where it is possible to come to agreements on co-ordination and common developments.

As we have seen from the case studies the countries in general terms fall into one of these two categories. No country so far has been able to generate a system where unrest and conflicts in the system are used in a creative way to modify present practices while at the same time using this learning experience to influence long-range innovation projects in a practical way. There are many reasons for this, some of an organisational nature, others relating to vested interests in different groups (the teacher community, the research community, etc.) mainly arising out of different perception of the innovation process itself.

PLANNED ROLES AND CREATIVE ROLES

At the individual level it is possible to observe a problem in the innovation process which, to some extent, is parallel to the problem described above at the institutional level. This is the problem of involving individuals who like to play a creative role in projects which demand a systematic and planned role behaviour. In the Thornlea study, for example, this problem is referred to several times with the following conclusion:

> "However it seems that creativity and systematic evaluation are somewhat incompatible, with an ideal balance between the two difficult to achieve"(182).

This problem is observed in many of the case studies, not least in the central institutions where a systematic and evaluated process has been a major objective. In some cases this problem is "solved" by a specialisation in roles. The creativity aspect is often connected with the leadership or "change agent" role. More systematic behaviour is achieved by giving researchers an important role in the whole structure of a project from its planning through to completion.

Usually, however, this conflict is not resolved. Some teachers with creative ideas never get their ideas challenged or modified into viable projects. Sometimes this happens because what they consider a bureaucratic process is destroying their original ideas. Sometimes it happens that the personalities who show a high degree of creativity can seldom work in teams where systematic processes are necessary. In other cases creative individuals are

not rewarded for their creativity but rather punished by a system which favours routine work.

This conflict appears to be a basic problem which cannot easily be resolved. We are again back to fundamental considerations of what the process of innovation ought to be.

INNOVATIONS - ARE THEY WORTH IT?

The chosen definition of innovation, i.e. "a change that is purposefully planned to achieve desirable effects related to stated objectives" is, as we have repeatedly seen, somewhat removed from the realities. In fact what we have observed is that what is called innovation is sometimes only a change unrelated to a careful assessment of needs and objectives. The result is that after all very little has changed.

A careful analysis of outcomes of different innovations will surely illustrate that changes in organisational or behavioural terms occur infrequently. Unfortunately, however, systematic evaluation is seldom part of the innovation process. We do not know, and most innovators do not know either, if the innovations are really working. For many reasons innovators are probably just as much afraid of failure as anybody else. Since innovators are seldom "good" for everyone it would be easy to find "failures" in any innovation. In spite of this, however, a remarkably high number of reports conclude that the innovations have been carried through "successfully". Innovative activities are risky activities and the following observation is made in the Thornlea case study(183):

> "This is another way of saying that innovation is a risky business and must be recognised as such. We think that the people at Thornlea have shown this recognition. The short history of the school has reflected an approach to education in which ideas that sound promising are seen as worth trying. The problems encountered along the way are seen as a natural part of the pursuit of better ways of doing things. We think that any innovative organisation must have this ability to recognise that problems are inevitable and that growth can only occur by treating problems openly and with respect as experiences to be learned from".

In the absence of hard facts about outcomes of the innovation

process some decision-makers have used other techniques to convince others about the successes. An interesting observation in many of the cases is that outside "experts" seem to have played an important role in both the development and the implementation process. Some famous educators have been brought on to the scene in the planning process, delivered lectures about particular innovations in other countries and convinced the people concerned about the desirability of certain innovations.

It is even more interesting to note the use of outside experts in the evaluation and dissemination process. In some cases innovations from one country have been taken up by other countries or even pushed by international organisations. In these cases this has been used as a compelling argument for implementation of a project throughout a country. This has even been done in spite of the fact that research data have not convincingly demonstrated the project's readiness to be implemented. The best explanation of this is probably that convincing arguments from experts with a high reputation give the decision-maker a sense of security which is greatly needed in a process which after all is a risk-taking operation.

Innovations - are they worth it? This question can also be understood in economic terms. We have not made any cost-benefit analysis of the innovations studied. Firstly, it was not the purpose of the study, and secondly we do not think that data available in Member countries are of such quality that they would allow a proper cost-benefit analysis. Again, one would have to ask: costs - in what terms? and benefits - for whom? One can probably answer the question if one only means costs in terms of simple expenditure per pupil related to quality of instruction in cognitive terms. This, however, is a very limited measure of cost-benefit although it may be useful in certain cases.

Most innovations are of a pure curriculum-oriented nature where skills, knowledge and cognitive output are the major objectives. In these developments, cost-benefit analyses have been used as arguments in the projects. The best examples of this are probably the two mathematics courses, i.e. IMU in Sweden and IPI from RBS. In both cases high development costs have to be paid off through a relatively extensive implementation phase.

In the case of IMU the intention has been, besides the main

purpose of individualising teaching in mathematics, to develop a teaching-learning system where the total costs of instruction should not be higher than traditional instruction. Since the investment in the material itself through development costs and increased production costs is higher than in the traditional learning material one would have to reduce other costs if the same outcome were to be achieved at the same level of expenditure. IMU was developed in a period of teacher shortage in mathematics and the original idea was to save teacher costs in the project. Negative reactions from the profession have partly changed the policy of the NBE on this point. In spite of this modified policy, however, the development costs of about US$800,000 will in narrow economic terms be an investment, since so far the operational costs of IMU in Sweden are US$200,000 less than ordinary instruction(184).

The developments of IMU in Norway have shown that with present costs per pupil IMU can be used in Norwegian schools without higher total costs. It has still to be proved that the IMU teaching-learning system produces the same or better results than traditional instruction. In purely cognitive terms this is probably doubtful but a higher degree of individual instruction and other objectives might be convincing in an overall evaluation.

In the development of the IPI in RBS the objective has not been to produce a teaching-learning system which costs the same as traditional instruction. The opposite policy has been chosen, i.e. that increased quality will have to cost more money. Ovsiew(185) says:

> "Cost, from the very outset, might have been a barrier to IPI adoption. IPI must cost more than ordinary elementary school programs, for it has features which are just not present in most elementary schools. There is an initial training cost for both the principal and teachers. There are some modest facilities costs, such as shelving for materials and room for data-keeping. There are necessary continuing costs: daily teacher planning time of thirty minutes, the salaries of teacher aides at the rate of one per each ninety pupils, and a materials cost of anywhere from three to five times the ordinary costs. RBS has brought these costs down a good deal, but still, on the average IPI will cost, for start-up and continuing operations, about $50.00 more per pupil than ordinary elementary schools. Experience, perhaps surprisingly, confirms the judgement that school officials who see and want what

the IPI instructional system gives are not always frightened off by the additional cost. Five or even eight per cent additional cost does not, apparently, itself call the tune. It is a judgement about value, not money, that has to be made.

Some cost reduction is still possible, perhaps, through differential staffing and commercial publication of materials in large quantities, but IPI will always cost more. But then, who can say what an elementary school should cost?"

In the search for more accountable educational systems, one can easily fall into the trap of developing "cost-efficient" solutions to narrowly defined problems. The question of educational technology, for example, often connected with the production of teaching-learning systems, should not be evaluated only in terms of its cognitive outcomes. Only if one considers overall objectives as well as unintended effects can a new instructional system be fairly evaluated.

Eide(186) discusses the complexity of educational systems, noting that most evaluation efforts build on the assumption of one-dimensional goals, and the "one product model". He develops an approach to evaluation building upon a multiproduct model, taking also latent functions of the system into account. He says:

"No proper assessment of educational performance can, however, be restricted to the performance officially stated as objectives of the system. Latent functions, often with far-reaching consequences for society, have to be included in the assessment. Otherwise, we would implicitly assume that the value-weights - positive or negative - which can be attached to such functions, equal zero.

Furthermore, we have to take a serious look at the assumption built into most current models, that the objectives of a system are identical with the technically defined outputs of the system".

The problem, however, is that no one really knows what the effects are of the present educational system. The demand for evaluation of innovations is very often connected with conservatism. In the same way experimentation is used in some countries in order to delay changes. Obviously it is easy to demand more experiments as a strategy for not taking final decisions. It is easy to demand careful evaluation of innovations because in almost all cases a

conflicting picture of the results will develop, first of all because there are conflicting demands and secondly because there are few ideal answers to complicated problems. As long as we do not know enough about the successes and failures of present practices, we should be careful of asking for comprehensive evaluations of new practices.

BARRIERS TO INNOVATION

Several times in this study we have seen that one or more interest groups have reacted negatively towards innovative projects. Most often negative reactions toward innovations are treated as "barriers" by the managerial group. At this stage we shall try to clarify what we see as "barriers" in the process of innovation on the basis of the analysis of all 17 case studies.

1. Value conflicts: Major innovations will always be based on changes in educational, social, political or economic objectives. These changes reflect changes in values and thereby value conflicts in society. Any groups interested in education necessarily have more or less clearly expressed opinions about the changes in values implied in the innovations. For a large number of people these value conflicts are not clearly understood and are only vaguely felt. Many reactions, therefore, may well be unclear and only vaguely communicated and therefore only partly understood by the decision-makers.

2. Power conflicts: Major innovations also imply a redistribution of power. The reactions from teacher groups, as well as from researchers, administrators, parents or students can best be understood in many instances as resistance due to unfavourable changes in the power distribution. Examples of this are conflicts between the Central Advisory Authority and the Experimental Gymnas in Oslo; also partly the conflicts between the central authorities and the Leicestershire authorities in the Comprehensive Building Programme, conflicts in the teaching staff in Ontario, the previously mentioned conflicts between groups in the Malmö region and the central authorities, conflicts between the communes and the Wetzlar region, conflicts between the local authorities and the New Jersey Administration (a number of such conflicts are illustrated in the case study) and the internal conflicts in the Ontario Institute for Studies in Education. One cannot regard these kinds of conflict as "barriers to innovation" merely on the basis that

they are irrational or not valid. One cannot overlook these problems or even manipulate them.

3. Practical conflicts: A number of innovations introduced into a system cannot prove their quality. They are simply not good enough and therefore do not serve to replace the old practice, or they are only a part of the answer and do not take other considerations into account. If one, for example, introduces a new curriculum, implying new teaching-learning methods, without changing the examinations as exemplified by projects in the Schools Council, one will necessarily run into serious problems. Nearly all institutions studied have experienced resistance, especially from teachers, on these grounds which are perfectly valid. Planning of innovations and their implementation is a major and complex job which has to take into account much more than the development of a specific project.

4. Psychological conflicts: In conventional language, the term "barriers to change" is used to refer to the inability of human beings to change from one situation which is well known to one which is unknown. The case studies seem to point out that this type of resistance is rare. On the other hand, if individuals or interest groups feel that they can benefit from a certain change they will have few difficulties with the change. Changes therefore not accompanied by incentives or, even worse, not changing old incentives that are counter-active to the new situation, will necessarily produce "psychological barriers" which can raise serious problems for the implementation of innovations.

"Barriers" to change, therefore, may be a series of reactions. In some cases they may be a reaction towards the innovation itself, in other cases towards the process or its management. The importance of these facts, however, is that "barriers" cannot simply be treated any longer as side effects but rather as indications of basic problems that may be inherent in the process itself. "Dissemination problems" therefore are one important indicator of problems not necessarily connected with the dissemination phase.

INNOVATIONS - WHY DO THEY FAIL?

In this volume we have not studied failures, but rather successful innovative projects. In spite of this, however, we have seen even in the most successful projects signs of problems and failures that cannot simply be traced back to the innovative idea,

the innovator, the institution, the product, the recipients, or other internal factors.

The analysis has shown that a number of "external" factors are important. Few projects have been created with the necessary political support. This sometimes means that the project has not gone through a necessary "screening process" in which the project idea is assessed in relation to other priorities in a global educational, social, and economic perspective. It can also mean that the idea has not faced initial discussions between interest groups, a process that will certainly take place at some stage.

Most projects do not relate to the existing legal and administrative mechanisms in a way in which they can be used for the benefit of the projects. In fact in most cases those in charge of an innovative project have only vague ideas about laws, administrative regulations and other mechanisms that have been set up to serve maintenance functions rather than innovative functions. These mechanisms are, when they are fully discovered, most often looked upon as "barriers". It is a fact, however, that maintenance of a system is necessary, and has to be taken care of at the same time as innovations are introduced. Only through a detailed discussion of these mechanisms and their possible modifications can an innovative project survive in the long run.

The same argument applies to the incentive structure that is in-built in any educational system. We have observed that the reward structure that regulates the behaviour of teachers is crucial for an understanding of the innovation process. Less frequently is the observation made that also institutional behaviour is dependent on an in-built incentive structure. The way research institutions function, for example, can partly be explained as a consequence of expectations and professional reward structures.

Any innovative work is a high-risk activity. When an idea is formulated and has been adopted, conditions have to be created to "shelter" the project from the constraints that regulate the on-going system. The forces against change in a system are in most cases far stronger than the supportive forces. Skilful management, and sometimes formal agreements among interest groups may be necessary to get a project developed.

We have repeatedly seen that many projects face the most severe problems in the dissemination stage. The lack of a systematic innovation policy that includes a relevant support-structure (research and development, in-service training, consultancy, local teacher centres, etc.), can often explain the failures.

INNOVATION AND IDEOLOGIES

During the 1960s we have seen a growth in educational innovations which seems to have no parallel in educational history. We have, of course, had similar reform movements before but the size and the rapid growth of educational innovations throughout the 1960s is the most remarkable feature in this respect so far.

In our comparative case studies we have identified current thinking and underlying assumptions of major innovations as well as key factors in the innovation process itself. In a recent article Michael B. Katz(187) presents a historical analysis of the ideologies behind the present educational reform. In his discussion of the ideologies behind the present educational reform movement he cites four basic philosophies: environmentalism, decentralisation, incipient technocracy, and pedagogical optimism.

Environmentalism

Katz compares the present environmentalism with similar movements in the mid-19th century as well as the progressive period. As in the two other movements the new re-emphasis of heredity has frustrated the optimistic reformists' expectations and Katz already sees a decline of this movement.

Decentralisation

The other major movement is the trend towards decentralisation based on the view that political change is imperative before educational change can take place and that therefore political control of the school systems must be secured before anything meaningful can change within the classroom. This position rests upon the following values:

> "It rests partly on a belief in the intrinsic worth of close, almost symbiotic relations between institutions and the communities they serve. It also rests on the value that some people attach to control of the education their children receive".

We have seen in this study that decentralisation of power away from administrators to teachers, as well as students, does not necessarily mean more democratic decision-making, nor "better" schools (not with decentralisation alone).

Incipient technocracy

The trend mainly in the late 1960s of producing large-scale technological innovations, particularly through the use of computers and through the development of teaching-learning systems, is based on the idea that large-scale developments are more economical,

more reliable and more valid than small-scale local educational efforts. The value behind these developments is the striving for more efficiency in the system - "efficiency" related to rather narrow cognitive outcomes. We have raised considerable doubts about this development trend, in particular because so far it has tended to be "product-oriented" rather than "user-oriented".

Pedagogical optimism

This trend in innovation is often connected with the trend towards decentralisation of decision-making. It advocates the liberation of both the teacher and the student, and puts happiness and warm human relations above cognitive development, subjects and other day-to-day school tasks. The assumptions are that what the school really is doing is teaching the students the "hidden message". What is important in school is not primarily the learning of specific knowledge and skills but the learning of how human relationships could be improved. This is learned through the way the school is managed and organised and through interpersonal relationships, rather than through the instruction of the subjects themselves.

Our own analysis points out the lack of open criticism in the innovation process. It is probably right to say that many innovators have been unable to face, resolve and examine conflicts in their projects. In only very few cases have the innovators realistically faced the value conflicts inherent in their own positions.

In the problem-identification phase, as well as in the evaluation phase, there are many weaknesses in most organisations studied. Seldom are the implied ideologies analysed; instead,the problems are treated as technical ones. We see this as one of the major problems in the innovation process today.

Chapter IX

STRATEGIES FOR EDUCATIONAL INNOVATION

A major task in this analysis has been to compare and evaluate the process of innovation as it can be studied at different administrative levels of the educational system, and possibly identify different roles and functions in the process. In this chapter we synthesise our findings and use this as a basis for a discussion about roles and functions of different institutions at various levels in the educational system. Finally we present some principles for a structure for innovation at the national and local level.

Until now we have treated the process of innovation mainly as one process. When we analyse this process across the three different levels, we find that it is not one process but different processes at each level and that these are only partly related to each other.

The 17 institutions differ, as we have seen (Chapter IV-V), in terms of their missions. They all play an important role in the process of innovation. Their different characteristics, however, illustrate present thinking or responsibilities and needs:

a) Central institutions for educational innovation are mainly set up to plan, initiate, develop and (with some exceptions) evaluate innovation in education. They usually have a comprehensive mission in terms of affecting whole national or state systems of education. They perform few routine tasks and generally have adequate resources and personnel to carry out development tasks. They are not involved in the day-to-day operation of the teaching-learning process. They are set up to support this process.

b) Educational regions are responsible mainly for the ongoing task of educating children and the management of a complex organisation. Their concern for innovation

is closely connected with their main task, that is, the improvement of schooling for everyone in their particular region. This usually means new and better ways of combining existing resources taking all external information and internal capacities into account. Regions usually control education: they can influence the direction of education but so far they have scarce resources for innovation.

c) Schools - even more than regions - are concerned mainly with the day-to-day tasks of education. Innovation in schools is largely a reaction to day-to-day failures and successes, attempting to implement new ideas and products in the teaching-learning process. This closeness to the learning process gives schools certain essential capacities but also imposes constraints, since the burden of day-to-day activities leaves little energy for on-going innovations in the system.

Personnel at each level, therefore, are involved in innovation from a very different angle, with different resources and capacities and with different interests. The case studies give interesting examples of how different institutions understand their mission, define their work and carry it out.

So far, without a closer look at different types of innovation and national characteristics in the decision-making structure, the following picture emerges:

a) Central institutes: The process is mainly one of initiation, development and evaluation.

b) Regional level: The process is mainly one of linkage, where utilisation of outside and inside resources is a key element.

c) School level: The process is mainly a practical problem-solving process, in which "innovative climate", and partly adoption and development of innovations from outside are key elements.

This picture, however, is complicated by the fact that different types of innovations have different political, social and educational implications. In this chapter we shall consider to what extent the decision-making structure determines roles and functions in the process. (Task No. 6 and Task No. 7, Chapter II, pp.56-57.)

Is there something like an "ideal place" in the system for innovative decision-making? This question cannot be answered in

a simple way. As we have seen, we have to take the type of innovation into account, but furthermore we must consider the stage in the process. The question we shall try to answer then is the following: for a certain type of innovation, at which level in the educational system should it be

a) formulated and adopted,
b) developed, and
c) implemented,

so as to achieve the stated objectives? Asking such a question does not necessarily mean a specialisation of functions. One can foresee that a specific innovation may be formulated, adopted, developed and implemented at one level in the system. In many cases, however, this is not so.

FORMULATION AND ADOPTION

Our analysis of the case studies shows that innovations mainly concerned with the objectives and functions of the school in its broader social and economic context (Category 1)(188) are looked upon as political questions, and in all cases are decided at the central level by political bodies. Examples of formulation and adoption of this kind of innovation are to be found in most of the projects initiated by the Commissioner in New Jersey, the comprehensive schools in Norway, Sweden, Finland, Denmark and Hesse, and the restructuring of secondary education in England. Common elements in these innovations are re-allocation of funds in the system, restructuring of student participation (from streaming to non-streamed schools), and the setting of new priorities, (educational equality of opportunity as important or more important than academic achievement).

Only in very few cases has research directly played a role in this process. Both in Sweden (where Royal Commissions have been guided by research) and in England, research has indirectly influenced political decisions. In Sweden, which has longer traditions in this aspect than most countries, the dialogue between politicians and researchers has probably had an educative effect on both groups. The adoption of policies in this category is achieved through laws and regulations, and followed up by financial incentives (see Chapter III).

Innovations in the other categories (administration and organisation, role and role relationships, curriculum) are formulated and adopted differently in the various countries.

In the case of Sweden, Norway and Finland, central political and administrative bodies provide the framework, and therefore in reality formulate and adopt policies.

In New Jersey, Denmark, Hesse and Bavaria, there is a greater mixture of central and local control of educational innovations than in the first group. In New Jersey, for example, there is a strong tradition of localism. However, the case studies show that the State, through the new Commissioner, has taken a strong initiative in all educational innovations.

In England and Ontario innovations in these categories are formulated and adopted at the local level.

The degree of decentralisation does not necessarily determine the degree of political control. As we have seen above (Chapters IV and V), the political influence at the local level is sometimes as strong as at the central level, but the influence of the managerial group is more obvious at the local level. Curriculum innovations (Category 4) are those which are influenced most by the professional group in the process of formulation and adoption.

DEVELOPMENT

There is a relationship between innovations in Category 1 (objectives and functions) and innovations in the other categories (see Chapter II). The latter are to a large extent operationalisations of innovations in Category 1. To the extent therefore that a country has a centralised decision-making structure (e.g. Sweden, Norway, Finland), the development stage also is centralised.

In Sweden regulations formulated by the Government (and in some cases the Parliament) set the framework for development in all categories. Innovations in Categories 2-4 are actually developed in NBE and in various research and development institutions connected with schools of education or universities or "Development Blocks" (e.g. Malmö). The NBE is responsible for the major part of all development work (except for the work directed by the municipalities), and determines new policies through the "curriculum guidelines" and central regulations.

Much the same is true for Norway, Finland and Denmark. In these countries, as we have seen, the development work is less structured by research, there is more initiative and independence in the local authorities, and local participation and involvement

is actively encouraged. (This is more and more a trend in Sweden too.)

Although a framework exists for syllabuses and the use of resources, and though external examinations can be used as a control measure, the situation both in England and Ontario leaves the local authorities and the schools themselves with the responsibility of development (Categories 2-4), with the Schools Council and other research and development institutions performing a service function. As far as curriculum is concerned, not even the local authorities (in England) can intervene in the decisions of the headmaster and his staff.

The situation in New Jersey and Hesse is rather more difficult to describe. Both have a tradition of localism and professional influence on development. In both cases the state is now introducing innovations with more centralisation of decision-making as a consequence (see Chapters III and IV).

The development stage is organised, as we have seen, quite differently in the countries studied. The various organisational patterns reflect different conceptions of the process of innovation. In the Scandinavian context also the operationalisation of innovations (in all categories) is partly regarded as a political question. The way a school is organised, role relationships and the curriculum are means to achieve not only educational but also social and wider political objectives. In philosophical terms this policy reflects a high degree of instrumentation. In countries with economic and social inequalities between regions (e.g. Norway, due to the wide variations in living conditions and its small population) central political control also of the development stage has been the result. As we have seen, however, professional participation is encouraged and plays a major role too.

We have looked into the question of teacher resistance to innovations in a centralised system. In Sweden the majority of the secondary school teachers were either against the 1962 Education Act which introduced the comprehensive school throughout the country and the 1964 Gymnasium Reform, or were lukewarm in their attitude. In this country, however, there is evidence in the case studies that at the local level most professionals, including the teachers, do welcome central initiative in educational innovation. This is accepted to such a degree that it would be unthinkable, at the local level, to initiate innovations which do not conform with the broader aims set out at the central level. It is fair to say that most professionals who were interviewed in

the study of the Malmö region looked at the central initiative as a stimulus for innovation, though it raised a number of problems. The case study in fact concludes that the market centralism of the Swedish educational system permitted the rapid implementation of fairly radical reforms which became both a condition and a challenge for regional initiatives.

In fact the Swedish central efforts are unique in their attempt to initiate, develop and disseminate educational innovations. The so-called "rolling reform" - which is an attempt continuously to reform the structure and curriculum of education - is a very ambitious attempt by the central government both to develop and to control education.

Even this very systematic process, however, has partly failed. The study of the RBS concludes that more information is needed, while the Malmö study concludes that more communication is needed. This observation is perhaps the best illustration of the problem of external control of innovation in large-scale educational organisations.

Even in a highly decentralised system, however, teacher attitudes to innovation are a question of major concern. In a recent study Lunn(189) shows that the differences between streamed and non-streamed primary schools were not significant mainly because many of the teachers in the non-streamed schools behaved as if they were working in streamed schools. Their attitudes on a variety of educational issues were similar to the teachers in the streamed schools, and they maintained classroom practices similar to those in the streamed schools.

Also in a country where the development of the curriculum is largely dependent on teacher attitudes and capacities, radical innovations involving changes in the behaviour of teachers seem to raise problems similar to those found in more centralised countries.

Most studies of change, particularly from a sociological point of view, stress the importance of individual initiative and control of development as essential factors for a successful process. We have tried to analyse to what extent centrally initiated and developed innovations create greater barriers and implementation problems than locally initiated and developed innovations. There is no evidence in the case studies that central initiative creates greater barriers between the client (student, teacher) and the initiator than in regional or locally initiated innovations.

IMPLEMENTATION

The discussion above gives us an important perspective to our considerations about the implementation of educational innovations. To implement an innovation in a school, school district or any educational institution which has not been involved in the development phase seems to be one of the major problems in educational innovation, as exemplified by a number of cases in the studies. In principle, the countries with central authority in innovation should possess the mechanisms for implementation embodied in the educational structure. For many innovations, however, dissemination closely linked to the planning-development-research-and diffusion model does not seem to work efficiently. The more decentralised structures on the other hand do have a basic problem in information and communication to other authorities in the country. In these countries, therefore, an efficient structure for dissemination by definition does not exist without the development of separate information structures.

The problem of information is tackled in various ways. Most of the central institutions have built up information services that, in principle, should reach the clients. In some cases television and other mass media are used together with information material, retraining courses and field services to bring about dissemination and implementation of innovations. So far these attempts have shown that even though a number of clients can be reached a large proportion of the community does not implement the innovations.

This can be explained in various ways. One explanation is that the information efforts are not good enough and certainly in most countries there is a need for much more sophisticated public relations work. When one looks at the situation in one of the most sophisticated countries (namely, Sweden, where a systematic dissemination and implementation effort has been launched in conjunction with the rolling reform programme) one is surprised at the reaction from the local bodies, especially the teachers. The case study of Malmö(190) shows that in many districts - even in a sophisticated development district such as Malmö - many teachers are not sufficiently aware of the innovations planned centrally, and are not ready to implement them in their classrooms. The barriers against innovation which are illustrated here are a complex problem, not yet sufficiently understood (see further discussion Chapter VIII, p.236).

When one looks more closely into this situation the reactions from teachers can basically be understood as a lack of interest in a process in which, as individuals, they have had little say and where decisions have been taken over their heads by other professional groups or through a technocratic and centralistic machinery. Lack of dissemination, therefore, is not basically a question of better techniques or more money for the same purpose but rather a question of involvement in the innovation process itself. What is needed is not just more information but more communication, and possibly a real involvement in the decision-making process.

There is no basis from the case studies to conclude that this phenomenon is connected only with centralistic educational structures. On the contrary, it seems that the same kind of reaction from the teachers is to be found in most of the countries studied. In the case of New Jersey, for example, one of the major criticisms of the attempts of the R & D Department is that it does not reach out to the teachers and the students. The same is true in the English context where the Schools Council has to make special efforts to establish links and communication with schools under local authorities, even though these same local authorities are represented as partners in their Governing Council.

The problem of information and of establishing communication provides the clearest illustration of the difficulties of using the planning-research-development-and-diffusion model in educational innovations. One has to ask <u>what kind of innovations</u> can possibly be disseminated (using this model) from central authorities throughout a complex social system. There is not enough evidence in the case studies to indicate this explicitly. A number of factors not related to the type of innovations also come into the picture. Most of the studies referred to in Chapter II are in fact dealing with psychological and sociological barriers in the diffusion of innovations. In the outline which follows, we see some examples of successes and failures in dissemination of different types of innovation.

<u>Category 1</u> (New objectives and functions)

Innovations in this category dealing mainly with new objectives and functions of the school, including new structures, have so far been developed and implemented relatively successfully in many countries, especially where a central decision-making structure exists in the administration of the system (e.g. Sweden, Norway).

Even though the case studies of the Leicestershire and

Devonshire regions show how a decentralised system can manage the implementation of this type of innovation, it is questionable how efficiently this structure can deal with a nation-wide implementation of this kind without a fairly powerful influence by the central government. The same would be true for the Federal Republic of Germany if one considers the individual States. At the individual State level, as illustrated in the Wetzlar(191) study, a concentration of authority in the State Ministry of Education has been achieved as a precondition for the introduction of comprehensive schools. The conclusion may be that the dissemination and implementation of innovations in this category - which clearly involve a redistribution of power - rest upon political-administrative strategies for change and therefore ask for a rather centralistic organisation.

Categories 2 and 3 (Administrative and organisational development and innovations in role relationships)

The innovations in these categories, which we have studied, fall mainly into three types:

i) New teacher-student relationships: Innovations in this area can be seen in the Experimental Gymnas in Oslo where this is a main emphasis of the school. It is also a prominent factor in the Rødovre School, the Countesthorpe College, in the Malmö experiments (especially in the flexible grouping project and IMU project). The approach of the NBE in developing teaching-learning systems whereby new teacher-student roles emerge is another attempt of this kind. Also, in the NCIE a number of projects aim to change teacher-student relationships, either as the major objective or as one of several objectives.

ii) New professional relationships: A number of projects studied have also as a major objective the aim of changing professional relationships. This is true for the organisational development work in the York County and their Master Teacher Programme. The Administering for Change Programme in RBS is another example of the same kind. The flexible grouping project in Malmö, previously mentioned, where teacher co-operation is a major element, also changes professional relationships. Attempts in New Jersey to create new management techniques have similar consequences at the administrative level. Also, the previously-mentioned project in NCIE changes

professional relationships and so does the organisational development work initiated by OISE.

iii) New decision-making structures: Some experiments studied aimed as a major objective to change the decision-making structure. This is quite clear in the Experimental Gymnas in Oslo, as well as in the Countesthorpe College. It is less obvious in the regions, with the exception of the York County, where this has been a major objective. The programmes of the central institutes have very rarely taken this up as a research and development problem, with the exception of the "Administering for Change" programme in RBS and the "Innovation Capacity" project in the NCIE.

There is a clear difference in qualitative terms between projects in Category 1 on the one hand and projects in Category 2 and 3 on the other. While developments in Category 1 (which have wider political and social objectives) deal with structures and organisational changes that have been disseminated and implemented through central laws and regulations, innovations in Category 2 and Category 3 have so far not proved to be easy to "disseminate" with these measures.

A traditional method has been to establish a high level committee or commission to study the administrative patterns, as well as the role relationships in the system and to suggest new approaches and solutions. This has been the "development phase". The "dissemination and implementation phase" has been secured by laws and regulations, and partly by new incentives.

One major reason behind the establishment of some of the R & D organisations was that these approaches have not proved to be successful. The reasons for this are probably of two kinds.

a) Changes in human relationships can rarely be achieved by force merely through laws and regulations. Role relationships are determined by a complex combination of structure, power distribution, decision-making processes, role expectations, personal characteristics and relationships, and incentives. So far these interrelationships have not been studied in depth in educational settings and we are only just beginning to understand how they can be changed.

b) In the present educational structure a hidden incentive system exists. One hires people of a certain orientation, one pays teachers in a specific way, one punishes

> and rewards students for specific purposes, one has an organisation which blames certain behaviour and praises certain other activities. In most cases new laws and regulations have been introduced without a careful analysis of the changes which at the same time have to be made in the incentive systems if there are to be any chances of success in implementation(192).

We are then faced with the question "Can these types of innovation (involving role relationship) be disseminated and implemented?". The example cited from the Swedish context, where an information and in-service training approach has been used extensively, shows that even the more sophisticated approaches are not wholly doing the job. Classroom practice, the relationships between students and teachers, the relationships between professionals, and the way decisions are taken in schools have not changed dramatically. Traditionally this question has been looked upon as a technical problem. With more resources, more information, better use of mass media, developments would be disseminated and implemented. The teacher reactions, however, which can be demonstrated in the case studies of Malmö region, RBS, Schools Council, NCIE and NBE can best be understood as a question of attitudes, values and authority. The "grass roots" level, this time represented by the teachers, is in fact questioning not only the nature of the developments but the way they are developed and then "imposed" upon the lower levels. It is a debate about who should control not only the objectives and the content of learning, but the very nature of the classroom situation.

The only case we have studied in which these questions have been seen as reflections of different value orientations is the case of the Experimental Gymnas in Oslo. Other developments, however, as is illustrated by Chesler and Lohman(193) show that innovations in decision-making and role relationships are of major concern to a large number of schools and school districts in America. The same is true for developments in Scandinavia and some parts of continental Europe.

The conclusion is that these types of innovation involving role relationship are difficult to disseminate and implement and that we know too little about how complex social systems change role-relationships and decision-making structures. One is inclined to hypothesise that every single school has to find its own solutions and therefore has to go through a continuous learning process, involving the development of new relationships and decision-making

structures. If this is correct, one would need an educational structure which permits and facilitates such developments in every single school. This would require drastic changes in conventional thinking about schools. A thorough investigation of the consequences for the internal structure and resources in the school (as they are related to the innovative process) must be carried out as well as an investigation of the relationship between the school and the educational structure of which it is a part.

The role of central authorities - or perhaps of any external authority - in the dissemination and implementation of these innovations is therefore in principle questionable and difficult. Even changes in educational structures (Category 1) are never really "implemented" if they are not followed by an "internal development process" that affects the decision-making structures and role relationships. A country with a centralistic machinery which has successfully implemented new educational structures can quite easily fall into the mistake of continuing a centralistic political-administrative strategy for the implementation of innovations in Categories 2 and 3, which are qualitatively different and probably can be implemented only through other strategies.

Category 4 (Curriculum)

Innovations in curriculum and examinations are the most typical and frequent innovations in education and they appear in all the 17 case studies as a major concern.

The types of innovation we are talking about usually have two components (which can hardly be separated):

1. A goal or value component which deals directly with the normative changes which are implied in these types of innovation.
2. A technical component which deals with questions like revised content of a certain subject with new textbooks and examinations, new methods and organisational structures as means of achieving new objectives.

The case studies do not deal with the changes over time in a certain classroom. The researchers have not observed to what extent teacher and student behaviour is changing with the introduction and implementation of educational innovations. It is quite clear, however, that innovations in this area mean behavioural changes on the part of the teacher and/or the student. Behavioural changes usually cannot take place without basic attitude changes and again we are in the middle of a problematic area in which a large number of individuals in a large social system - the school system - are expected to change their behaviour and relationships.

So far the strategies for these changes have been curriculum guidelines, training, information and, as mentioned, development of teaching aids and more sophisticated teaching-learning systems. The case studies show that in most cases the Government has been too optimistic about the effect of the strategies used and has too often taken for granted the fact that changes in guidelines and other measures change classroom behaviour. Reactions from teachers and researchers as well (e.g. Malmö case study) clearly illustrate a variety of negative feelings about what is considered premature and amateurish dissemination of innovations.

We started this chapter by trying to identify "the ideal place" in the educational system for the formulation, adoption, development and implementation of the different types of innovation. We are left with a rather complicated picture. Over and over again we are faced with the issue of "centralisation" versus "decentralisation". As we have already seen, this is not an "either-or" question, but rather a question of what kind of decisions and processes should be centralised and which should be decentralised, in order to reach desired objectives.

CENTRALISATION OR DECENTRALISATION - WHAT DOES IT MEAN?

If we look upon the question of centralisation or decentralisation as a strategy problem - and this is only one way of looking at it - we come to the conclusion that except for innovations in Category 1 most innovations tend to benefit from a more decentralised decision-making structure. In particular, this might be true if it were possible to design such a role for the central service agency which is efficient and beneficial for all parties involved, as well as to solve the dissemination problems in the structure. So far, however, we can cite no examples of this ideal situation.

How do teachers perceive this problem? After all they are at the "grass roots" of the decision-making hierarchy and are central among those who will have to change their behaviour if innovations are to be effective. We do not have sufficient data from our case studies to give a conclusive answer to this question. We have observed some innovative schools which are different because teachers' attitudes are different. The common argument, of course, is that teacher involvement in decision-making is

essential for the success of innovations. One often draws the conclusion, therefore, that the decentralised decision-making structure would be the most beneficial for innovations to occur. We do not think that this must necessarily be the case. If one assumes that teachers consider this question as vital (which we cannot prove in our case studies) one would have to ask the question, what will be the impact of local decision-making versus central decision-making on the situation of the teacher? We shall assume that if the choice is between decision-making in the Ministry and decision-making in the local department of education, many teachers would choose the Ministry in preference to the local department. The reason is, of course, that local control can be as difficult as central control - if not worse. In-group and out-group phenomena at the local level can easily produce tension and conflicts, very often unrelated to the innovations but still influencing the decision-making about the innovations. This question was discussed at a workshop organised by CERI in Cambridge in 1969 and the report concluded at this point(194):

> "Underlying this discussion of centralisation is the concern with the effects of an authoritarian society as a whole, and/or authoritarian structures within the school system. It is recognised that where the tradition tends to be authoritarian and the school system relatively conservative, this presents special problems in the introduction of innovation. In other words, it is not necessarily the degree of centralisation or decentralisation, but rather the degree of authoritarianism which might explain to some extent the openness of different systems to innovation".

If one is left with the choice between central and local decision-making, therefore, probably in some cases one is left with no choice at all. The only real choice would be to decentralise decision-making down to the school level itself - not only to the headmaster but to the school itself, including the students. In particular at the secondary level there are examples of this kind of management structure, exemplified in our case studies by the Experimental Gymnas in Oslo. This immediately raises the question of the relative autonomy of a school in the educational system. To what extent is it realistic to assume that an individual school can be completely independent of the national structure and the external environment, including the local community, in its

decisions about the teaching of children? All the case studies of the schools in fact exemplify how closely any innovation in a school is connected with both the local environment, especially the parents, and the approval of either local or central bodies. In the Countesthorpe College quite radical forms of individualised instruction already create problems for those students who will have to fit in with external examinations. In the Thornlea School parents begin to ask for "results" after some few years of innovative work. This shows how intimately an individual school is linked to the overall educational structure. But does it need to be like that? We cannot go into this question in this study(195). But it seems to us that, as a consequence of the educational structure in all the countries studied, certain constraints will always have to be imposed upon the school:

1) "quality" requirements in certain core activities;
2) entrance requirements in certain receiving institutions;
3) requirements concerning equality of educational opportunity;
4) regulations concerning the level of expenditure.

Even if these constraints were imposed upon a school, however, they can readily take more and more the form of a framework in which the school has considerable freedom to operate. For example, even though a school were constrained in terms of the level of financing one can foresee a situation where the students and teachers together determined how the money should be used, the level of staffing, the amount and type of instruction, the type of management, internal quality control and other measures which today are regulated by central or local regulations or by certain interest groups (e.g. professional groups).

A STRUCTURE OF EDUCATIONAL INNOVATION

Since education involves a combination of political, social, economic and educational objectives, all to be fulfilled, we are left with a major problem in trying to identify useful strategies for innovation. As we have seen, only a carefully planned integration of various strategies has proved to be useful.

The educational system, being the largest and probably most powerful of our social institutions, cannot simply be changed and made to perform differently by the application of one set of

strategies for one type of innovation at one stage of the process. A successful process implies the use of all three strategy orientations (see p.43), involving all levels of the system, to perform different tasks throughout the various stages in the process. A careful analysis of the interplay between interest groups, an understanding of the consequences of the use of various strategies, and a mastery of available know-how and resources, are necessary conditions for a successful process.

Since the countries studied differ so much politically, socially and educationally, it is difficult, if at all possible, to "prescribe" one structure for educational innovation. We shall, however, suggest certain policies that seem to satisfy basic requirements in all countries studied. In some countries parts of the proposed structure are already operating.

Any structure for innovation will reflect a certain understanding of the nature of education. In proposing a structure we have deliberately tried to think of education as a service function for the user (student and parents): there is, we believe, a trend towards this view in most of the countries studied. In doing so we do not forget that education traditionally has been regarded as a main instrument in social policy. Education is also looked on as an instrument for economic and social objectives - often good intentions hard to achieve. Although political-administrative strategies are a precondition for the formulation of these objectives, we maintain that the process necessary to facilitate educational innovations can best be achieved through the active involvement of the user.

This has major consequences. It means for example that the "objectives-means-output" paradigm is not a static dimension which can be planned, developed, implemented and evaluated, but rather that it is highly dynamic. It has to be defined on a continuing basis in a dialogue with the "user" (defined as the student, and student's parents), and in fact is the very basis for learning. It does not mean, of course, that objectives, means, processes and outcomes cannot be defined, but rather that they have to be defined on a continuing basis, not externally but in a dialogue with the user himself.

This obviously would be a major policy change for most educational systems. We believe, however, that education has a unique role to play in our society by the very nature of its process - learning. The educational system may be the only social institution left where the individual can define and determine his own experiences.

The rather simple structure we are proposing can also be used for an educational system with a more instrumental policy. The difference would be that such a system would give priorities to other activities, and would influence the process through a more direct control, often defined as central control.

THE NEED FOR A NATIONAL INNOVATION POLICY

We have repeatedly seen that innovations in Category 1 (new objectives and functions) usually imply a redistribution of resources and a shift in priorities. In all cases this has required a political decision - a national (State) decision - if it is to be achieved to any substantial degree.

We have also observed that any radical change in curriculum (Category 4) would have consequences beyond the individual school or school district. All schools have in the long run to respond to the educational, social or economic realities.

Piecemeal reforms have so far had little effect on education. Our case studies show that such innovations usually have their basis in one-sided interests, are defined within the already accepted framework, achieve little dissemination and often do not change basic attitudes or behaviour in the classrooms.

The present educational system, although "reformed" through various adaptations to changes in society, had its origin in a society very different from the present one. What is needed is a National Innovation Policy which can redefine the nature, the objectives and the functions of education in its social and economic context. Without such a national policy the individual learner, the school and its staff, would be hampered by outdated laws, regulations and requirements in their attempts to innovate.

A National Innovation Policy would not necessarily mean a stronger centralisation of decision-making. Even in a highly decentralised country, as we have seen, the structure itself is the main control mechanism upon the individual school. Only by a redefinition of the educational structure (its objectives, means, etc.) can a school function as an innovative school.

The basis for a National Innovation Policy is a comprehensive understanding of the various factors in the innovation process. It should not be concerned with only one stage of the process (e.g. development), or only one type of innovation (e.g. curriculum), but requires an analysis of the whole educational system and

the conditions for a successful innovation process (from identification of needs to implementation).

As we see it, the role of the National policy is not to direct and control changes in the system. Its role is rather to lay down the conditions for innovation in the system. This may imply changes in laws, regulations, examinations, personnel policies, incentives and development of "support functions" (see below) both nationally and locally. The role of the National Innovation Policy would be to facilitate innovations in the system by changing the existing framework.

None of the central institutions studied meets these requirements. NBE and NCIE are examples of institutions with some of the functions described above. The NBE has a mission which could incorporate what we mean by a National Innovation Policy. So far, however, most of its energy has been devoted to the ongoing task of managing the existing system. The responsibility for innovation, however, is seen more and more as the main task for the institution.

The NCIE has similar functions with the advantage of having only the responsibilities for innovation in the system. It does not, however, have responsibility for the implementation stage.

As we have seen (Chapter III) all the other institutions are restricted in their mission to certain functions in the process (e.g. planning or research or development), or to certain types of innovation.

A National Innovation Policy is obviously a political concern in the broadest sense. Co-operation with other national policies (economic, social) is essential, and communication with and participation of different interest groups is also essential.

THE NEED FOR A LOCAL INNOVATION POLICY

We have already argued extensively for local participation in the innovation process (see Chapter V). We will not repeat the arguments here but stress that we see the innovation process as the most important opportunity for learning in schools. This, however, would be true only if the user, the student and parents, participates in the process from problem identification to implementation.

A local innovation policy does not mean, therefore, giving increased authority to those who already hold power, but creating

conditions for a continuing dialogue in the school, and between the school and the regional and central bodies. Careful consideration should be given to those aspects of the policy which encourage a problem-solving attitude and an innovative climate (see Chapter V).

A local innovation policy should have as its main objective to encourage and facilitate innovations in schools. This would certainly imply a support structure (see below), but moreover it would necessitate a continuous analysis of external and internal constraints, reconsideration of arrangements for management, organisational patterns, incentives and leadership functions. This process may be the most important learning process for both teachers and students and others who participate in it.

THE NEED FOR AN INNOVATIVE SUPPORT STRUCTURE

The educational system today uses special institutions and programmes to assist the school. The whole educational administration is supposed to function as a support structure, including activities such as teacher training, the production of textbooks, the use of inspectors and in-service training. We believe that major changes are necessary in these institutions if desirable innovations are to materialise in the schools. In this context we shall not discuss these changes since the case studies deal only indirectly with these questions. We shall, however, point to some needs that are evident (and in most cases are not met by any present institution) in most countries:

i) Local teacher centres

The Malmö case study gives an example of one of the first deliberate efforts in Europe to develop a regional development centre. In the study of the Schools Council one sees a sustained effort in the United Kingdom to establish teacher centres throughout the country (more than 500 at present). This is also so in New Jersey, Ontario, Denmark and Norway. In all areas they play an important role in dissemination and seem to be a necessary new structure for innovation.

Sometimes they are used deliberately by the central authorities as a strategy for the dissemination and implementation of innovations (see the case study of New Jersey), but in most cases they are based either on regional initiative and control (England), or on a combination of central and regional control (Norway, Sweden, Denmark and Ontario).

Except in the United Kingdom, teacher centres (or development centres) are not widely established. So far their functions and impact differ but they do seem to meet certain basic needs:

1) an information centre for teachers in a region;
2) an in-service training centre for teachers and administrators;
3) a demonstration centre for innovative practices (developed inside or outside the region);
4) an experimental centre to assist teachers in their innovative tasks, both professionally and technically.

Teacher centres can play an important linkage function, both between the school and its environment, and among teachers with innovative ideas from different schools.

In the case study of the York region(196) we described the Master Teacher Programme. The change from inspectors to consultants is an interesting development in most of the countries studied (see Chapter IV). This suggests that a new type of inspector is needed. He should not be responsible for the control of existing practices, but be a resource person who can assist the teachers in the different stages of the innovation process. If teacher centres could be staffed with "Master Teachers" who are "process experts" as well as subject specialists, the centres would be a major stimulus in the innovation process.

We have argued for a new role for the researcher, a resource person with research qualifications who can be a "process facilitator and evaluator" in the schools (see Chapter VII). The teacher centres would be an ideal base for such persons. In addition they would be able to assist schools and school districts in the evaluation of new educational products developed inside or outside the region. When necessary the researcher could also serve as a resource person in relation to research and development institutions.

ii) Research and Development centres

We regard research and development as a service function for innovative schools and school regions. Well planned, developed, tested and evaluated programmes are a necessity for a modern educational system.

As we have concluded in this volume, however, the readiness of the users to implement new structures, products and practices is more of a problem than the development of a particular product itself. We have also concluded that product development based on

the P-R-D-D model has so far been successful only in some areas in the curriculum field.

New approaches to research and development are therefore essential if the growing number of these centres is to succeed. Participation of the user (both teacher and student) is one important element in a new strategy.

Chase(197) discusses important characteristics of successful research and development institutions. He first considers the need for a more systematic planning, development and evaluation cycle, and he adds:

> "One related characteristic is attention to all the major elements in learning environments. The approach is one of creating systems which have as components instructional materials and media, physical settings, and the development of relevant behaviour for teachers and other school personnel, family groups, and community volunteers. The process becomes one in which all are teachers and all are learners, with frequent opportunities for transposition of roles.
>
> A third characteristic is the linking of many organisations and institutions in the implementation of programmes. Not only is a greater attention being given to the contributions which can be made by Departments of Education, school districts, and educational associations of many kinds; but more effort is being expended to involve parents, civic groups, industries, ethnic leaderships, social agencies, and volunteers from the communities concerned.
>
> Another distinguishing characteristic of many laboratory and centre programmes is a strong accentuation of the positive elements in the social and cultural environments of those populations which are designated as disadvantaged. The values and strengths which are associated with being a black in America or a member of a non-English-speaking group in an Anglo-Saxon culture or an Indian in a white man's civilisation become the starting points for finding oneself and the building of relations to others".

The development and production of new educational materials is a complicated, time-consuming and expensive task. More and more centres would need to specialise on major themes. One can foresee a network of specialised centres which would serve as

resource and information centres for school districts, schools, teacher centres and national authorities.

As we have seen from some of the central institutions studied, a secondment system tends to have an important function for the dissemination of innovations. Research and development organisations increasingly should employ teachers and other professionals on a secondment basis. These centres may be as important for the development of persons as for the development of products.

iii) A national information network

We have argued for an information network to encourage contacts between key individuals in the innovation process. The case studies demonstrate the importance of leadership at all levels of the educational system.

Gallagher(198), dealing with the problems of educational innovation in a decentralised system with "autonomous" teachers and administrators, said:

"1. We consistently underestimate the complexity of the change process in education.
2. Programme change, when it takes place, usually occurs because a personal relationship has been established by the person selling change and the education customer.
3. Unless systematic channels of communication involving personal contact are established, the changes will be difficult to maintain, even if started.
4. It is hard to find those elements in the new programmes that are so rewarding that they will overcome the fears and anxieties raised by departing from the educational status quo".

Access to information does increase the power of the individual who has this access. Measures must be taken therefore, through political and professional channels, to ensure that an information network does not represent a danger of centralising information and restricting access to a few individuals. The danger is not so much that an individual may "misuse" information, but rather that the selection of "relevant" information is a value question which cannot be delegated to a few individuals.

The necessary information network for key individuals in the process therefore must be seen as one part of an increased problem-solving capacity in any educational institution. The ability to

analyse problems and interpret them in a wider context is the concern of everyone engaged in the process. The kind of information which is relevant would then be defined by everyone concerned.

As we have observed throughout our analysis, the major problem is not that information does not exist, but rather that very few are interested and take the energy to look for relevant information. The creation of a need for relevant information is probably more important than the expansion of the information service. This need is directly connected with the role the individual plays in the process. Only through real participation in decision making, in a dialogue with those concerned, and in active involvement in the development and evaluation stages, is it possible to create conditions for communication. An active partner is necessary if communication is to have any meaning.

A structure for innovation would always have to have links with the administration of the existing educational system. In some cases (e.g. Sweden) the innovative structure is integrated in the ordinary administration. In other cases the innovative structure is more or less separated from the day-to-day administration of the system (e.g. U.K., Norway). One can foresee all kinds and degrees of integration both at the individual and the institutional level. We have observed advantages and disadvantages in all present structures. There is no one way to organise the process. A particular combination of factors in one country may call for a solution different from that required by the organisational pattern in another country, even if many basic factors (e.g. type of innovations, degree of centralisation) are the same.

Annex 1

CASE STUDIES OF EDUCATIONAL INNOVATION

1 - AT THE CENTRAL LEVEL

	Study	Researcher
1.	The Schools Council, United Kingdom	Prof. John Nisbet, University of Aberdeen
2.	The Ontario Institute for Studies in Education (OISE), Canada	Prof. Francis S. Chase, former Dean of the School of Education, University of Chicago, USA
3.	The National Council for Innovation in Education (NCIE), Norway	Prof. Sixten Marklund, National Board of Education, Sweden; and Eskil Björklund, Director, Chancellor of the University's Office, Sweden
4.	The New Jersey Administration, United States	Prof. Michael D. Usdan, City University of New York
5.	The National Board of Education (NBE), Sweden	Oddvar Vormeland, Director of Education, Oslo, Norway
6.	The Bavarian State Institute for Educational Research and Planning, Germany	Prof. F.E. Weinert, University of Heidelberg, and Prof. Heribert Simons, University of Heidelberg, Federal Republic of Germany
7.	Research for Better Schools Inc. (RBS), United States	Prof. Leon Ovsiew, Temple University, USA

2 - AT THE REGIONAL LEVEL

1.	Leicestershire, United Kingdom	Prof. Brian Holmes, University of London

2 - AT THE REGIONAL LEVEL (Continued)

2.	Devon, United Kingdom	CERI Secretariat
3.	Wetzlar, Hesse, Federal Republic of Germany	Dr. Helga Metzner, Frankfurt am Main, Federal Republic of Germany, and Dr. Günther Probst, Berlin, Federal Republic of Germany
4.	York County Board of Education, Ontario, Canada	Prof. Jan J. Loubser, Herbert Spiers and Carolyn Moody, Ontario Institute of Education, Canada
5.	Malmö, Sweden	Dr. Wolfgang-P. Teschner, University of Kiel, Federal Republic of Germany

3 - AT THE SCHOOL LEVEL

1.	Countesthorpe College, Leicester, United Kingdom	Dr. Gerald Bernbaum, University of Leicester, U.K.
2.	The Experimental Gymnasium, Oslo, Norway	Mr. Trond Hauge, Department for Research and Innovation, Municipality of Oslo, Norway
3.	Thornlea School, Ontario, Canada	Dr. Michael Fullan, The Ontario Institute for Studies in Education, Canada
4.	Rødovre School, Rødovre, Denmark	Mr. Jom Ploug Olsen, School of Education, Cophehagen, Denmark
5.	Tapiola School, Tapiola, Finland	Mrs. Lyyli Virtanen, Finland

Annex II

CERI CASE STUDIES OF INNOVATIVE REGIONS

Draft of Revised Guidelines

I. Background

II. Advanced Practices

III. Problem Identification

IV. Solution Formulation

V. Solution Adoption

VI. The Process of Implementation: General Procedures Followed

VII. Evaluation Procedures and Modification

VIII. Other Activities in the Regional Organisation as they relate to the Change Process

IX. Researcher's own Evaluation, Speculation, etc.

I. BACKGROUND

This first section of the report is to place the region in its social, political and educational context. In general it should contain as much of the following information as is relevant and obtainable.

1) Relevant historical facts.
2) Place in organisation of administration in nation, province, state.
3) Major sources of provision of needs (financial, personnel, materials, information).
4) Scope and limits of authority and implications for initiative in innovations:
   a) Legal: i) National: Constitution/Legislation
      ii) Regional: Legislation/Statutory
   b) Political de facto
      i) Educational organisations: teacher's unions - university agencies - associations of administrators - PTA.
      ii) Non-educational: political parties - trade union organisations - churches - organised big business.
   c) Economic
      Availability of resources associated with legal and political parameters.
5) Relations with other organisations with implications for innovation.
   (educational, non-educational, formal, informal).
6) Relevant political factors, economic factors and social factors within the region. Might include population density, mobility, industrial base, composition of population, general values of population as they relate to education or general educational level of population.
7) Description of internal educational organisation - division of labour functions, approximate size, etc.
8) Objectives of the regional authority:
   - what are they?
   - how articulated and established? Derived from what sources?
   - major reception groups and recipients
   - perceptions of means for attaining objectives.

II. ADVANCED PRACTICES

1) Those practices chosen for concentration in this report are to be revealing of educational practices in the region and of styles/processes/methods of implementation. All things being equal keep in mind the criterion of potential use or interest to educators in the OECD Member countries. Choose two or three if possible.

2) Description of the practices: enough so that the practice be recognisable but not known in all its details. If possible refer here (using bibliography) to sources of further information about the practice. It is possible that a relevant piece of information might be what criteria make the practice 'advanced' - this in turn may require a brief statement of characteristics of the old practice, also a note of the advanced practice's intended effects. The practice might represent a change in goal or a change in means of reaching it. Refer if possible and desirable to goals of the region outlined in 'Background'.

3) Description of each practice will also include a description of the extent to which the practice is in use at the moment; historical data as necessary to date its introduction, key events in its implementation, etc. Useful information might also include who were/are primary users of the advanced practice, what persons or groups were supposed to change their behaviour or make use of new information, skills or materials.

4) Advanced practices may exist in any one of several possible taxonomies, one of which is given below largely as an aid to recognition.

a) Level or stage of education.

b) Aspect of education.

i) Structure

a. reorganisation of vertical arrangements between levels

b. reorganisation of horizontal relationship at any selected level of education

c. urban-rural

ii) Content

a. reorganisation of content/curriculum

b. reorganisation of timetable

c. introduction of new content

iii) Methods of Instruction

a. introduction of new theories of instruction

b. practices

c. technology

iv) Administration/Finance/Control

a. devolution of authority - teacher-participation

b. sources of finance

c. research units/planning personnel

5) Note. It is suggested that as part of the selected bibliography the address be given of a person or source of further information about the practice.

III. PROBLEM IDENTIFICATION

1) Although it is not assumed that problems are in all cases identified before solutions are found, the general questions here are:

i) who or what has the power to draw attention to a problem, to identify it, and

ii) who or what did so in the case(s) of practice(s) under study - assuming this process did take place.

Groups with this power or function might include:

a) National Agencies

Educational: Statutory
Voluntary

Non-educational: Statutory
Voluntary

b) Regional Agencies

Bodies inside regional organisation with special responsibilities for identifying problems?

c) School Agencies

c) Questions would include:

a. How can the search for problems be characterised: conscious and rational? Accidental?

b. Has a backlog of problems been organised and arranged in priorities?

c. What is the distribution of people involved in the search for problems?

d. Is any definition made of problems in terms of goals and objectives of the region?

Keep in mind that answers to these questions must be derived from tracing the actual process of problem identification in the case(s) under study.

IV. SOLUTION FORMULATION

1) Again it should be pointed out that solutions may have been found before problems are identified.

2) The question is who and/or what is generally involved in solution formulation and who or what has been involved in the particular case(s) under study. Impetus may come from outside the region or from within:

- from national agencies whether educational or non-educational (e.g. central institute for educational change, parliament)
- from regional agencies (e.g. local school board, local planning unit)
- from local school or student group
- from processes combining any of the above (e.g. use of research data, consultation, etc.)

3) Questions might include:

a. What kinds of information does the region define as relevant and in what form does it use such information? How is the region linked to channels of information about advanced practices, i.e. to learn what is available and what are possible solutions? (e.g. print, audio-visual, personal contacts, group and temporary system arrangements).

b. How are these channels created and maintained?

c. What special structures and processes are involved in finding solutions, e.g. Development Block, Research and Development Unit?

d. What is the rough balance between energy devoted to search and energy devoted to invention?

e. How can the search for solutions be characterised? (Rational and planned? Accidental?)

f. In describing how the solution was formulated in the particular case(s) under study, key information would include:

- Who or what were involved in the formulation process?
- What evidence was used in arriving at the solution and how was this evidence gathered?
- What (if any) were notable stages during formulation? e.g. Experiments and consequent modification? Any attempts to consider alternatives which might achieve the same effects?

V. SOLUTION ADOPTION

1) The power of decision actually to adopt a certain solution may be statutory in nature, may be imposed from outside the region, may be within the bounds of regional authority, or may rest upon compromise between the region and outside authority.

2) Again the point is to derive general procedures in the region from precise description of the process the case(s) under study.

3) Questions might include:

a. Identification of the groups (formal or informal) which may be involved in solution adoption, i.e. have the power de facto or de jure to block or oppose the adoption of a particular solution. (Pay attention to people who may participate in groups outside the formal organisation.)

b. Identification of groups or persons involved in making decisions to adopt, and the general processes by which decisions are usually made.

c. In describing the particular case(s) under study, key information should include:
   - Who or what made the decision to adopt a solution?
   - Who or what persons or groups opposed the decision, on what grounds, in what ways, and with what results (including how were they managed if relevant)?
   - Who or what persons or groups supported the decision, on what grounds, in what ways, and with what results (including how were they managed, if relevant)?

VI. THE PROCESS OF IMPLEMENTATION: GENERAL PROCEDURES FOLLOWED

1) Is there one overall concept or strategy of change that pervades the change activities?

a. Active: Is there a planned strategy or philosophy? How well articulated is this strategy or philosophy? Can people talk about it? Has experience changed it or has it been modified over time? Is there internal consensus within the relevant agencies or groups on a philosophy of change?

b. Discerned: Can a strategy be discerned e.g. power-coercive, rational-empirical, normative-re-educative?

2) Four phases can be isolated: Preparation, Implementation, Evaluation, Diffusion (i.e. throughout the region).

a. Can these phases be discerned in the case(s) under study?

b. Who and/or what is involved in each stage?

c. For each, the following information be included:

Preparation: Preparation may be psychological or institutional (e.g. training for use of new equipment) or both. Generally the question is what is the general pattern employed in preparing to introduce or try an advanced practice, and what were the stages in the case(s) under study? In particular:

a. Were there attempts to secure commitment? (or attempts to convince, or announcements?)

b. Were there any attempts to define the problems of the users? To define who needed what kind of preparation? How such needs might be met?

c. How were training needs met? Any attempt to acquire relevant resources from within or without the system? To work in a collaborative manner with various concerned groups in the system?

d. How were financial concerns sorted out?

e. What organisational patterns existed to manage the preparation phase?

f. On what was the judgement based that preparation has been adequate? Who made such a decision?

Implementation:

a. Where and on what scale was the practice first implemented?

b. Who or what was involved in this decision?

c. Who or what groups were involved in the implementation?

d. What problems arose and how were they handled?

e. What organisational patterns existed to manage the implementation phase?

Evaluation: (i.e. before the practice was diffused throughout the region)

a. Was there any conscious attempt to evaluate and modify accordingly?

b. What provisions existed in evaluation?

c. Who or what persons or groups were involved in the evaluation?

d. What modifications resulted if any?

e. Were the effects of the advanced practice and/or modifications intended or not?

f. Were effects measured qualitatively? Quantitatively?

g. What organisational patterns existed to manage the evaluation?

h. On what was the judgement based that evaluation and/or subsequent modification was complete? Who made such a decision?

Diffusion:

a. Upon what was the judgement based to implement the process throughout the region? Who made such a decision?
b. Who or what groups were involved?
c. Did the process differ from that of the original implementation? How?
d. What organisational patterns existed to manage the diffusion stage?

VII. EVALUATION PROCEDURES AND MODIFICATION

1) The advanced practice(s) under study have presumably to some extent been disseminated throughout the region.

2) In the opinion of the regional organisation and/or the public (if possible) have these practices had the intended effects? What degree of success have they had? What unintended effects have they had? What impact? What are primary reasons for successes and failures in impact?

VIII. OTHER ACTIVITIES IN THE REGIONAL ORGANISATION AS THEY RELATE TO THE CHANGE PROCESS

Insofar as possible and relevant note what arrangements have been made for such items as the following, and how they help or hinder the change process:

1) Utilisation and management of the Internal Environment.
   a. The logic of the division of labour, how is it related to the process of change? Does it help or hinder? Has it been modified through experience?
   b. Working relationships between chief education officers and administrative subordinates.
   c. Working relationships between central office people and school heads and teachers.
   d. Personnel practices - recruitment, selection, placement, in-service training, promotion, rewards.
   e. Communication patterns, status and authority relationships and decision making processes.
2) Utilisation and management of External Environment.
   - How is the region linked to sources of aid or support in its external environment?

- How are these links utilised or managed?
- What aid does the region receive from its external environment?
- How does it manage non-aiding sectors of its environment?

IX. RESEARCHER'S OWN EVALUATION, SPECULATION, ETC.

The situation in a given region has so far been described authentically; here the researcher may want to draw on his own knowledge, etc. and speculate on such things as major sources of resistance to change, major sources facilitating change, change capacity, openness to change, etc.

Havelock's "Overall Evaluation" section, prepared for the regional group at the CERI seminar, is reprinted as a possible guide to some areas that might be covered.

Overall Evaluation: (Rate and give evidence which stands out where possible)

A. How well does the regional office handle <u>linkage</u> (channels of communication, joint effort)?

1. Linkage to other resource systems (universities, government agencies, etc.)
2. Linkage among staff and administrators within regional office
3. Linkage to regions
4. Linkage to schools
5. Linkage to teachers (if applicable)
6. Linkage to students (if applicable)

B. How well does the regional office <u>structure</u> change efforts?

1. Planning
2. Diagnosing
3. Goal setting
4. Division of Labour - Specification of Tasks
5. Monitoring of Change Process
6. Evaluation of Results

C. Does the regional office exhibit <u>openness</u> to change?

1. Accepts inputs from other resource systems
2. Actively seeks out resources
3. Looks for and chooses among <u>alternative</u> solutions
4. Willing to change goals, procedures

5. Accepts feedback from students, teachers, regions schools
6. Able to adapt as well as to adopt them

D. Does the regional office have adequate capacity to innovate?

1. Level of training and skill of staff
2. Financial resources
3. Amount of staff time
4. Able to invent and build solutions as well as to adapt, adopt, disseminate

E. How well does the regional office orchestrate change processes?

1. Able to employ multiple media and strategies to bring about change
2. Able to persist in change efforts with particular clients over time, including repeated inputs and follow-up

F. Which of the major models of change is best exemplified by the work of this regional office?

NOTES AND COMMENT

1. This is a general outline, not exhaustive, which suggests some of the information which might be included in various sections of the report. It is assumed that not all points will be relevant to each site; furthermore any site may require examination of points not fully covered here.

2. It is desirable but not absolutely necessary that each report follow to some extent the order of sections found in the attached guidelines. Whether or not chapter headings are the same is at this stage a matter of personal preference.

3. Writing style: these reports are being written with the non-academic reader in mind. Use narrative form where possible. See also Matthew Miles comments pp.1-2 Comments on CERI Case Studies of Educational Innovation. Notes regarding form of bibliography etc. to follow soon.

4. Sources of information for the case studies include

newspapers, internal documents, interviews, observation, questionnaires, etc.

5. The emphasis in all these studies is on the process of change and other information, e.g. 'background', is to be included insofar as possible, only as it is relevant to the process of change.

6. It was agreed at the seminar that each researcher would also include a brief introductory statement stating major methods of obtaining information, the balance struck between the various methods, possible shortcomings, etc.

FOOTNOTES

(1) Oppenheimer, R., "Prospects in the Arts and Sciences". Perspectives USA, II, (Spring 1955) p.10-11.

(2) The Management of Innovation in Education. Report on a workshop held at St. John's College, Cambridge, 1969. CERI/OECD, 1971.

(3) Annex I is a list of the case studies and their authors. When individual case studies are mentioned in this volume, the reader is referred to Annex I.

(4) Annex II: "CERI case studies of Innovative Regions", Draft of Revised Guidelines.

(5) Rogers, E.M., with Shoemaker, F.F., Communication of Innovations, A Cross-cultural Approach. Free Press, New York, and Collier-MacMillan Ltd., London, 1971.

(6) Stuart, M., and Dudley, C., Bibliography on Organization and Innovation. Center for the Advanced Study of Educational Administration, University of Oregon, 1968.

(7) Kurland, N.D., and Miller, R.I., Selected and Annotated Bibliography on the Processes of Change. New York State Education Department, Albany, N.Y., 1966.

(8) Havelock, R.G., Bibliography on Knowledge Utilization and Dissemination. Center for Research on Utilization of Scientific Knowledge, University of Michigan, Ann Arbor, 1968.

(9) Guba, E.G., "A Model of Change for Instructional Development". Paper prepared for the Educational Media Conference, Indiana University, 25 June 1968, p.1.

(10) Barnett, H.G., Innovation: The Basis of Cultural Change. McGraw-Hill, Inc., New York, 1943.

(11) Beal, G.M., and Bohlen, J., "Social Action: Instigated Social Change in Large Social Systems". Models for Educational Change, Alvin L. Bertrand and Robert C. Von Brock, editors, Southwest Educational Development Laboratory, Austin, Texas, 1968, p.55.

(12) Niehoff, A.H., "The Process of Innovation". A Casebook of Social Change, Arthur H. Niehoff, editor, Aldine Publishing Company, Chicago, 1966, p.40.

(13) Richland, M., Traveling Seminar and Conference for the Implementation of Educational Innovations. System Development Corporation, Santa Monica, California, 25 October 1965, p.32.

(14) Havelock, R.G., "Innovations in Education, Strategies and Tactics". Working Paper, Center for Research on Utilization of Scientific Knowledge, University of Michigan, Ann Arbor, 1971.

(15) Marklund, S., The New Role of the Teacher in Swedish Innovative Schools. OECD, Paris, 1972.

(16) Miles, M.B., Innovation in Education. Teachers College Press, Teachers College, Columbia University, New York, 1964.

(17) Brickell, H.M., Organizing New York State for Educational Change. State Education Department, Albany, N.Y., 1961, pp.61-62.

(18) Herzog, J.D., "Viewing the Issues from the Perspective of an R & D Center". Paper read at the American Educational Research Association Symposium on Educational Improvement and the Role of Educational Research, New York, February 1967.

(19) Marklund, S., The New Role of the Teacher in Swedish Innovative Schools. National Board of Education, Stockholm, Sweden, September 1971.

(20) Goodlad, J.I., The Development of a Conceptual System for dealing with Problems of Curriculum and Instruction. University of California, Los Angeles, 1966.

(21) Miles, M., Innovation in Education. Teachers College Press, Teachers College, Columbia University, New York, 1967, pp.15-18.

(22) A CERI project, "New functions and structures of the school", is concerned with these questions.

(23) Chin, R., "Basic Strategies and Procedures in Effecting Change". Morphet, E.L., and Ryan, C.O., Designing Education for the Future, No. 3. (Eight-State Project, Denver, Colorado), New York Citation Press, 1968.

(24) Bennis, W.G., Benne, K.D., and Chin, R., The Planning of Change. Holt, Rinehart & Winston, London, New York, Sydney, Toronto, 2nd Edition, 1969.

(25) Havelock, R., "Innovations in Education, Strategies and Tactics". 1971, op. cit.

(26) "Suggestions Relating to Topics for Third Area Conference on Strategies for Planning and Effecting Needed Changes in Education". Designing Education for the Future (Eight-State Project, Denver, Colorado), October 1966.

(27) Guba, E.G., "Development, Diffusion and Evaluation". Paper prepared for the University Council for Educational Administration Career Development Seminar, Portland, Oregon, October 1967, pp.27-29.

(28) Bennis, W.G., Benne, K.D., and Chin, R., The Planning of Change, op. cit. p.34.

(29) Bennis, W.G., Benne, K.D., and Chin, R., Ibid., p.40.

(30) Ovsiew, L., "Research for Better Schools, Inc. (RBS), United States", in Case Studies of Educational Innovation, 1 - At the Central Level. CERI/OECD, Paris, 1973.

(31) "Planning and Effecting Needed Changes in Education". Designing Education for the Future, No. 3 (Eight-State Project, Denver, Colorado), October 1966.

(32) Europe Year 2000, Project launched by European Cultural Foundation in 1968 to gain insight into the future problems of European culture and to promote solutions. One of the projects comprising the programme is concerned with "Educating man for the 21st Century".

(33) Bennis, W.G., Benne, K.D., and Chin, R., op cit., pp.34 and 43.

(34) We will be using the term political-administrative instead of the term power-coercive.

(35) Bennis, W.G., Benne, K.D., and Chin, R., op. cit., p.52.

(36) McClelland, W.A., "The Process of Effecting Change". Paper presented to Division 19, of the American Psychological Association Annual Convention, San Francisco, September 1968, p.15.

(37) Bennis, W.G., "A New Role for the Behavioral Sciences: Effecting Organizational Change". Administrative Science Quarterly, VII, September 1963, p.144.

(38) Chin, R., "Some Ideas on Changing". Perspectives on Educational Change, Stiller, R.I., editor, Appleton-Century-Crofts, New York, 1967, pp.336-338.

(39) Lippitt, R. Watson, J., and Westley, B., The Dynamics of Planned Change. Harcourt, Brace and World, Inc., New York, 1958, pp.131-143.

(40) Buchanan, P.C., "Crucial Issues in Organizational Development". Change in School System, Cooperative Project for Educational Development, Goodwin Watson, editor. National Training Laboratories, National Education Association, Washingdon, D.C., 1967, pp.58-59.

(41) Caldwell, M.S., "An Approach to the Assessment of Educational Planning". Educational Technology, VIII, 15 October 1968, p.5.

(42) Guba, E.G., "The Change Continuum and Its Relation to the Illinois Plan for Program Development for Gifted Children". Paper delivered to a Conference on Educational Change, Urbana, Illinois 1 March 1966.

(43) Havelock, R.G., A Change Agent's Guide to Innovation in Education. Educational Technology Publications, Inc., Englewood Cliffs, New Jersey, 1972.

(44) Havelock, R.G., Planning for Innovation through Dissemination and Utilization of Knowledge. Institute for Social Research Publications, University of Michigan, Ann Arbor, Michigan, 1969.

(45) Goodlad, J.I., Educational Change: A Strategy for Study and Action. Unpublished paper.

(46) Goodlad, J.I., "The Individual School and Its Principal: Key Setting and Key Person in Educational Leadership". Educational Leadership, 13 October 1955, pp.2-8.

(47) The Management of Innovation in Education. CERI/OECD, 1971, op. cit.

(48) Educational Technology: The Design and Implementation of Learning Systems. Report based on a workshop organised by CERI in conjunction with the British, Dutch, German and Swedish authorities in Leiden, Netherlands, from 19 to 25 April 1970, CERI/OECD, 1971.

(49) Ovsiew, L., "Research for Better Schools, Inc. (RBS), United States", in: Case Studies of Educational Innovation, 1 - At the Central Level. op. cit., p.530.

(50) Egerton, J., "The Acid Test of the Regional Laboratories". Southern Education Report, IV, January/February 1969, p.13.

(51) Category 1: Objectives and functions
Category 2: Organisation and administration
Category 3: Roles, role relationships
Category 4: Curriculum.

(52) Ovsiew, L., op. cit., p.567.

(53) ibid., pp.584-585.

(54) ibid., pp.578-579.

(55) This volume, to some extent, has used the work of Louis M. Maguire as a reference to the literature in Chapter II. Maguire, L.M., An Annotated Bibliography of the Literature of Change. Research for Better Schools, Inc., Sanford Temkin, Philadelphia, 1970.

(56) Ovsiew, L., op. cit., p.548.

(57) Planning-Research-Development-Diffusion Model.

(58) Ovsiew, L., op. cit. pp.567-568.

(59) Ovsiew, L., op. cit., p.548.

(60) Ovsiew, L., op. cit., p.573.

(61) Usdan, M.D., "The New Jersey Administration, United States", in: Case Studies of Educational Innovation, 1 - At the Central Level. CERI/OECD, Paris, 1973, p.273.

(62) ibid., pp.294-310

(63) ibid., pp.325-330.

(64) Nisbet, J., "The Schools Council", in: Case Studies of Educational Innovation, 1 - At the Central Level. CERI/OECD, Paris, 1973, p.16.

(65) ibid., p.15.

(66) ibid., p.24.

(67) ibid., p.29.

(68) Schools Council, Curriculum Innovation in Practice. Report by J. Stuart Maclure of the Third International Conference, Oxford, 17-22 September 1967, London, HMSO, 1968.

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(70) Teschner, W.P., "Malmö, Sweden", in: Case Studies of Educational Innovation, 2 - At the Regional Level. CERI/OECD, Paris, 1973.

(71) Vormeland, O., op. cit., pp.410-416.

(72) Marklund, S., and Bjørklund, E., "The National Council for Innovation in Education (NCIE), Norway", in: Case Studies of Educational Innovation, 1 - At the Central Level. CERI/OECD, Paris, 1973, p.169.

(73) ibid., p.169-171.

(74) ibid., p.179.

(75) Later increased to nine members.

(76) Marklund, S., and Bjørklund, E., op. cit., pp.179-180.

(77) Chase, F.S., "The Ontario Institute for Studies in Education (OISE), Canada", in: Case Studies of Educational Innovation, 1 - At the Central Level. CERI/OECD, Paris, 1973, p.97.

(78) Chase, F.S., op. cit., p.133.

(79) Weinert, F.E., and Simons, H., "The Bavarian State Institute for Educational Research and Planning, Germany", in: Case Studies of Educational Innovation, 1 - At the Central Level. CERI/OECD, Paris, 1973, p.461.

(80) Efforts towards standardisation are taken by the "Ständige Konferenz der Kultusminister der Länder (SKK)".

(81) Weinert, F.E., and Simons, H., op. cit., pp.468-469.

(82) ibid., p.475.

(83) ibid., p.484.

(84) Holmes, B., "Leicestershire, United Kingdom", in: Case Studies of Educational Innovation, 2 - At the Regional Level. CERI/OECD, Paris, 1973, p.15.

(85) ibid., p.20.

(86) Bernbaum, G., "Countesthorpe College, Leicester, United Kingdom", in: Case Studies of Educational Innovation, 3 - At the School Level. CERI/OECD, Paris, 1973.

(87) "Devon, United Kingdom", in: Case Studies of Educational Innovation, 2 - At the Regional Level. CERI/OECD, Paris, 1973.

(88) ibid., p.133.

(89) According to the so-called 11+ examinations.

(90) Teschner, W.P., "Malmö, Sweden", in: Case Studies of Educational Innovation, 2 - At the Regional Level. CERI/OECD, Paris, 1973, p.346.

(91) Vormeland, O., op. cit.

(92) Teschner, W.P., op. cit., p.341.

(93) Metzner, H., and Probst, G., "Wetzlar, Hesse, Federal Republic of Germany", in: Case Studies of Educational Innovation, 2 - At the Regional Level. CERI/OECD, Paris, 1973.

(94) Loubser, J.J., Spiers, H., and Moody, C., "York County Board of Education, Canada", in Case Studies of Educational Innovation, 2 - At the Regional Level. CERI/OECD, Paris, 1973, p.237.

(95) Fullan, M., "Thornlea School, Ontario, Canada", in: Case Studies of Educational Innovation, 3 - At the School Level. CERI/OECD, Paris, 1973.

(96) Loubser, J.J., Spiers, H., and Moody, C., op. cit., pp.278-279.

(97) See the formulation of the Education Act of 1950 ("Forsöksverksamhet och 9 årig skola") in Sweden, described in T. Husén, The Problem of Differentiation in Swedish Compulsory Schooling. Scandinavian University Books, Stockholm, 1962.

(98) Regarding reforms in secondary schools, see Marklund, S., and Bjørklund, E., "The National Council for Innovation in Education (NCIE), Norway", in: Case Studies of Educational Innovation, 1 - At the Central Level. CERI/OECD, Paris, 1973.

(99) Hauge, T.E., "The Experimental Gymnasium, Oslo, Norway", in: Case Studies of Innovation, 3 - At the School Level. CERI/OECD, Paris, 1973.

(100) Hauge, T.E., op. cit., pp.118-123.

(101) ibid., p.125.

(102) Virtanen, L., "Tapiola School, Tapiola, Finland", in: Case Studies of Educational Innovation, 3 - At the School Level. CERI/OECD, Paris, 1973.

(103) Gymnas is both junior and senior secondary school in Finland.

(104) Olsen, T.P., "Rødovre School, Rødovre, Denmark", in: Case Studies of Educational Innovation, 3 - At the School Level. CERI/OECD, Paris, 1973, p.256.

(105) ibid., p.256.

(106) The Rector is the responsible head of the school, the Principal is responsible mainly for the internal teaching and learning.

(107) Holmes, B., "Leicestershire, United Kingdom", in: Case Studies of Educational Innovation, 2 - At the Regional Level. CERI/OECD, Paris, 1973.

(108) Holmes, B., op. cit., pp.29-50.

(109) Bernbaum, G., "Countesthorpe College, Leicester, United Kingdom", in: Case Studies of Educational Innovation, 3 - At the School Level. CERI/OECD, Paris, 1973, p.30.

(110) Generalisations on attitudes and extremes should be considered in the light of the fact that the case study was done only five months after the school started.

(111) Since this report was written, full voting rights have been given to all students over 15.

(112) Bernbaum, G., op. cit., pp.60-66.

(113) Loubser, J.J., Spiers, H., and Moody, C., op. cit.

(114) Fullan, M., op. cit., p.204.

(115) Fullan, M., op. cit., p.205.

(116) Chase, F.S., "The Ontario Institute for Studies in Education (OISE), Canada", in: Case Studies of Educational Innovation, 1 - At the Central Level. CERI/OECD, Paris, 1973.

(117) Bernbaum, G., op. cit., p.58.

(118) ibid., pp.39-40.

(119) Teschner, W.P., op. cit.

(120) Bernbaum, G., op. cit., p.40.

(121) Virtanen, L., op. cit., p.305.

(122) Bernbaum, G., op. cit., p.47.

(123) The Educational Testing Service for USOE's National Center for Educational Communication has suggested that the following dimensions are essential: goals, costs, uniqueness.
See: Epstein, M.G., et al., Selection of Products for Focused Dissemination. Educational Testing Service, Princeton, N.J., 1971.

(124) Virtanen, L., op. cit., pp.321-326.

(125) Olsen, T.P., op. cit., p.283.

(126) Hauge, T.E., op. cit., p.152.

(127) ibid., p.130.

(128) Sarason, S.D., The Culture of the School and the Problem of Change. Allyn and Bacon, Boston, 1971.

(129) Nisbet, J., op. cit., p.29.

(130) ibid., pp.32-33.

(131) Owen, J., "Comparative education, curriculum and the serving teacher". Education for Teaching, 84, 1971, pp.62-67. (Quoted in Nisbet, J., op. cit., p.49.)

(132) Fullan, M., op. cit.

(133) Metzner, H., and Probst, G., op. cit., p.181.

(134) Ovsiew, L., op. cit., p.530.

(135) Hauge, T.E., op. cit.

(136) Usdan, M., op. cit.

(137) Virtanen, L., op. cit., pp.306-307.
Tapiola School introduced a "Shock Council" (50 per cent teachers, 50 per cent students) in 1971.

(138) Hauge, T.E., op. cit.

(139) Virtanen, L., op. cit., p.305.

(140) Olsen, T.P., op. cit., pp.277-278.

(141) Fullan, M., op. cit., p.208.

(142) Hauge, T.E., op. cit., p.137.

(143) Virtanen, L., op. cit., p.305.

(144) Holmes, B., op. cit., p.55.

(145) The School Board appoints teachers, but the National Board certifies - and very seldom refuses to do so.

(146) Dalin, P., Innovation in Education - Norway. Technical report, CERI/OECD, Paris, 1970.

(147) Teschner, W.P., op. cit., p.379.

(148) Holmes, B., op. cit., p.56.

(149) Loubser, J.J., Spiers, H., and Moody, C., op. cit., p.304.

(150) This study does not analyse the relationship between other "support functions" (e.g. teacher pre-service and in-service training) and the process of innovation. These functions should by definition serve an innovative function.

(151) Lipham, J.M., "Leadership and Administration Behavioral Science and Educational Administration". ESSE, 63rd Yearbook, Part II, University of Chicago Press, 1964, pp.119-411.

(152) Bernbaum, G., op. cit., p.51.

(153) Loubser, J.J., Spiers, H., and Moody, C., op. cit., p.224 and p.225.

(154) Teschner, W.P., op. cit., p.378.

(155) Loubser, J.J., Spiers, H., and Moody, C., op. cit., p.239.

(156) Devon, United Kingdom, op. cit., p.147.

(157) Ovsiew, L., op. cit., p.556.

(158) Usdan, M., op. cit., p.282.

(159) Nisbet, J., op. cit., p.53.

(160) Weinert, F.E., and Simons, H., op. cit., p.493.

(161) The quantitative growth of educational research is documented by OECD in: Mendès Gil, F., Survey of Educational Research and Development. OECD, Paris, 1973.

(162) Eide, K., Educational Research Policy. Technical Report, CERI/OECD, Paris, 1971, p.22.

(163) Husén, T., "Two Decades of Educational Research in Sweden". Interchange, Vol. 1, No. 1, 1970.

(164) Teschner, W.P., op. cit., p.414.

(165) Nisbet, J., op. cit., p.73.

(166) Wrigley, J., "The Schools Council", pp.21-34, in Butcher, H.J., and Pont, H.B., Educational Research in Britain, 2, University of London Press, 1970.

(167) Wirt, J., "The Nature of Educational Research and Development". Appendix E, National Institute of Education, USOE, Washington, D.C.

(168) Chase, F.S., R & D in Urban Education. Unpublished paper.

(169) Chase, F.S., "Educational Research and Development in the Sixties: the Mixed Report Card". A background paper submitted to Select Subcommittee on Education, U.S. House of Representatives, April 1971.

(170) We are using the term "policy-oriented research" in a somewhat more restricted way than the term "decision-oriented research" as used by Cronbach and Suppes in "Research for Tomorrow's Schools" (MacMillan Company, Toronto, Ontario, 1969). Our term is used for research related to policy-making at national (State) or Federal level.

(171) Husén, T., "Educational Research and Policy-making". Education and Culture, 1968, 7, pp.7-14.

(172) Weinert, F.E., and Simons, H., op. cit., p.468 and p.469.

(173) Teschner, W.P., op. cit.

(174) Marklund, S., "PM om pedagogisk utvecklingsarbete på lokal och regional nivå". (Memorandum on educational development at local and regional level), unpublished paper, NBE, Stockholm, 20 September 1970, p.6. (Quoted from Teschner, W.P., op. cit.)

(175) Weinert, F.E., and Simons, H., op. cit., p.477.

(176) Gustavsson, S., "Political Theories of Research". Symposium on Science and Politics (in stencil form), Lund, 1968.

(177) Husén, T., op. cit., p.14.

(178) Messick, S., "Research Methodology for Educational Change". A paper delivered at the 1971 Invitational Conference on Testing Problems, N.Y. City, October 1971.

(179) Eide, K., op. cit.

(180) Usdan, M., op. cit., p.314.

(181) Corey, S.M., Action Research to Improve School Practice. Teachers College, Columbia University, New York, 1953.

(182) Fullan, M., op. cit., p.246.

(183) ibid., p.190.

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